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THE LIGHTS ARE BRIGHT—*Maniza Moore* 683

A STUDY OF PLATE WASTE AS A DIRECTIVE MEASURE IN FOOD CONSERVATION: PART II—*Mary Irene Hageman* 685

SOME PICTURES OF FOOD CONSUMPTION IN THE UNITED STATES: PART II. 1860 TO 1941—*Calla Van Syckle* 690

EFFECT OF FREEZING PRESERVATION AND COOKING ON VITAMIN CONTENT OF GREEN SOYBEANS AND SOYBEAN SPROUTS—*F. A. Lee and Joanne Whitcombe* 696

SOYBEANS AND SOYBEAN PRODUCTS IN THE MENU—*Gladys E. Vail and Mary L. Smull* 698

EFFECT OF QUANTITY PREPARATION PROCEDURES ON VITAMIN RETENTION: CANNED PEAS—*Faith Fenton, Ella Gleim, Margaret Albury, Kathryn Visnyei, and J. R. McCartney* 700

EDITORIAL

The First Marjorie Hulsizer Copher Memorial Award 703

A Letter From The Surgeon General 704

CURRENT COMMENT

A National Food and Nutrition Program 704

Sir John Boyd Orr Heads Food and Agriculture Organization 705

Manual for the Study of Food Habits 706

BOOK REVIEWS 709

CURRENT LITERATURE 710

NEWS NOTES 714

INDEX TO VOLUME 21 718

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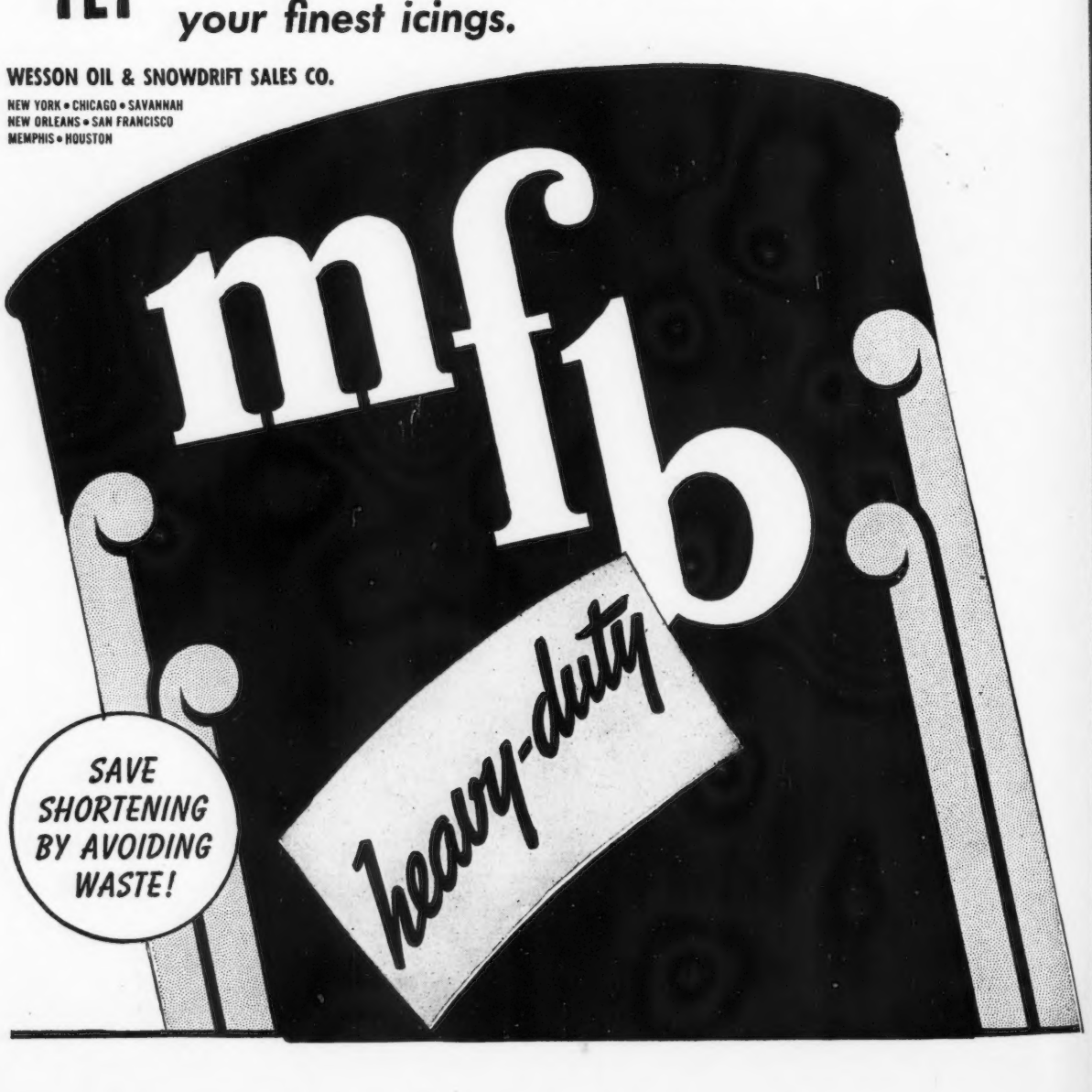

THE LIGHTS ARE BRIGHT[1]

MANIZA MOORE

Vanderbilt University Hospital, Nashville, Tennessee

IT WAS disappointing but inevitable in this year of rapidly changing events that the members of the American Dietetic Association were sent a "call to meeting," and at the same time urged to stay at home. In the past, the annual meeting has been the crowning event of the year for all Association work and activity. All committees kept in mind the reports to be given at the convention, and worked steadily to finish the projects assigned to them. State associations planned their meetings around the national program of work and invited members of the Executive Board to share their enthusiasm in professional activities.

Even so, without the stimulus of either national or state meetings, dietitians all over the world this year have presented an inspiring picture of steady professional progress. We have been represented in all branches of the armed forces and now that the actual fighting is over we are contributing to the rehabilitation of the liberated countries. Meanwhile, thousands of us stayed on the job at home, keeping civilian food service going in hospitals, schools and war plants, and teaching nutrition to professional and lay groups. Those in the armed services adjusted to strange environments, to menus fashioned from dehydrated foods, and to military rules and regulations. They served in every theater of war with distinction and devotion to duty. For some, recognition came in the form of medals and citations, but for the majority, there was ample reward in the satisfaction of giving wounded soldiers better meals by personal attention to details. Whether serving Christmas dinner from a tent kitchen close behind the lines or making ice cream in North Africa, the spirit of generous service was the same. Women who add the human touch to efficient routines receive more than medals in the memory of those they serve.

For the dietitians who stayed at home, there were neither citations nor medals, only a deep personal satisfaction in a job well done. They, too, served over and beyond the call of duty to maintain the high standards of the profession, in spite of all difficulties. They worked long hours and then gave precious off-duty time to community nutrition service.

The lights are bright for dietitians in this year of peace. For the demobilized Army dietitian, plans have been under way for some time to make reconversion easier. The War Activities Council has devoted its efforts this year to the collection of data about positions which will be available in schools, hospitals and industry. The Placement Bureau is ready and eager to assist in the transition from Army to civilian uniform and to bring together the dietitians and the employers who have been awaiting their return to rebuild depleted staffs.

Tentative plans are being considered to provide refresher courses for the Army dietitians who may feel the need of reviewing civilian routines, even though the real refresher course may be the one the veterans give us. They have learned new methods and have adjusted to many unusual situations. We hope they will be willing to share their experiences with those who stayed at home.

In addition to sharing methods of work, collaboration in the writing of an "A. D. A. War Chronicle" is indicated for those who served so well, both at home and abroad. A few sketches of life in the war zone have already appeared in print, enough to show that dietitians can write if they will. War service in strange places provides ideal material for a story, but is not the only source of inspiration. The dietitians at home have their contributions to make before the pattern is complete. Dietitians have always been modest and unassuming about their personal accomplishments, but this may become a fault if carried too far. For the further advancement of the American Dietetic Association, it is time for us to speak and write about the phases of nutrition and dietetics which we know best.

We are members of a young profession, and perhaps we have been afraid of endangering our rating with the allied professions of Medicine, Education, and Nursing by ill-advised publicity. When we were laying the foundations of an ethical organization, it was wise to be careful to the point of timidity, but now that our place is secure, we are ready to distinguish between good and bad publicity, and to plan a program of information designed to acquaint the public with the objectives and ideals of the American Dietetic Association. To accomplish the most in this direction, a carefully considered plan of public relations is needed.

It is natural for emphasis to be placed on publicity at the time of the annual convention or in preparation for state meetings, but such sporadic efforts may be compared to cramming for an examination. If, instead, a well-balanced program of public information were maintained throughout the year, press relations would be on a firm basis at the time of the annual meeting, and no unusual devices would be required to attract favorable notice. This is an opportune time to launch such a program of public information. There is so much to be told.

We are proud this year of the recognition won by the dietitians in the Veterans Administration. The change from subprofessional to professional grade is a just acknowledgment of their services. A request has come from the Administrator of Veterans Affairs for a Dietetic Advisory Council for the veterans' hospitals. As an Association, we are glad to share in the work of improving the food service and making life more pleasant for the hospitalized veteran. We are appreciative of the opportunity for service. The members of the Dietetic Advisory Council for 1945–46 are Dorothea F. Turner, Helen McLachlan, and Maniza Moore, Chairman.

For the first time, an annual award is to be made available this year for outstanding accomplishment by a member of the American Dietetic Association. This award was made possible through an anonymous gift of $5,000 to the endowment fund of Barnes Hospital, St. Louis. It was the wish of the donor that the interest from this fund be used as a memorial to Marjorie Hulsizer Copher, formerly Chief Dietitian at Barnes Hospital. During World War I Mrs. Copher served as dietitian with the Peter Bent Brigham Base Hospital 57. For her work with the B. E. F. and the A. E. F. in the war, she was presented with a French decoration, and with a British decoration by King George V. Mrs. Copher became a member of the American Dietetic Association in 1921; she was a member of the Journal Board and initiated the JOURNAL'S Current Literature section. It is anticipated that this award will afford a means of official recognition of outstanding achievement by members of the Association and at the same time will provide a fitting memorial for a pioneer in the field of dietetics. The problem of choosing the recipient of this award will be largely that of selecting one from a number of dietitians, all worthy of recognition.

Last year a Scholarship Fund was established with two gifts from friends of the American Dietetic Association. To this the Executive Board added the interest from the

[1] President's Address. Read before the House of Delegates, American Dietetic Association, Chicago, October 16, 1945.

Life Membership dues. The fund now totals $489. With this small beginning, the Association assumes its rightful obligation to encourage graduate study. While the fund is small now, it is hoped that when plans for its use are known, state associations and individual members will be interested in enlarging it. So far, because of lack of funds, our contribution to the cause of research has been limited to recommending our members for scholarships offered by other agencies.

The work of the four sections of the Association has continued during the year at the usual high standard. New projects were chosen carefully to meet the needs of busy dietitians. Several studies continued from last year are nearing completion and will be ready for publication in the near future. New publications of the Association prepared by the sections and soon to be available include: *Handbook of Diet Therapy*, *Nutrition Bibliography*, and *Manual for Teaching Nutrition to Nurses*. The brochure, *Dietetics as a Profession*, has been revised and brought up to date in such a handsome fashion that a copy is traveling around the country in an exhibit by the Society of Typographical Arts. The long-contemplated history of the Association, complete with pictures, will soon be ready for the library. Much more material, both for reference use and to supplement the available information on the activities of dietitians, is needed. Requests for information and exhibit material have come from the Office of War Information, the War Manpower Commission, and the War Labor Board. Numerous questions from allied associations and from individuals show the need for attractive, well written educational and descriptive material for distribution, in order to keep the public informed about our activities.

A reference library developed through the assembling of Association publications and aided by donations of money and books is a dream yet to be realized, but high in importance in our planning. It has been suggested that members of the American Dietetic Association who have scientific libraries plan to donate these books to the Association library when they retire from professional activities. Another suggestion is the establishment of memorials through donations to the library.

Interest in nutrition was given a tremendous impetus by published reports based on the physical examinations of draftees before our entry into the war. Federal support was provided for a National Nutrition Program to remedy some of the defects in the diet of the present generation and prevent widespread malnutrition in the future. Since the inception of this program, the number of bills affecting nutrition and the profession of dietetics has increased at each session of Congress. This growing interest on the part of the lawmakers brings an added responsibility to the members of the American Dietetic Association. Our Legislative Committee in Washington functions as a source of information on proposed and pending legislation. Dietitians throughout the nation must promote nutrition education at home and then study pertinent legislation reported by the Committee, in order to be assured that such legislation represents the wishes of an informed people.

Before the outbreak of the war, industry was beginning to investigate the influence of food on the efficiency of workers. With the sudden expansion of factories due to war orders, the provision of wholesome, attractive meals in plant cafeterias became a necessity. With the realization of the value of well-fed workers on the production and assembly line, industry looked to the members of the American Dietetic Association for administrative dietitians. Finding their training good but the supply of available dietitians inadequate, due to the needs of the Army and established civilian units, many industries expanded their programs to include a course of training for dietitians. The advance into industry is one of the bright spots in dietetics. The field is large and offers excellent opportunities for dietitians qualified to participate in the managerial aspects of catering.

Adjustments to all the factors which will influence our profession in the coming years will challenge the imagination of every dietitian, regardless of her particular field of work. The present trends in nutrition and dietetics reflect the changes in customs and ideas which have developed during the past four years. One of these changes is seen in the current belief that every food service must be operated on an efficient business basis, whether it be in industry, school or hospital. This points to limitless opportunities for the dietitian to show her ability as a business person, as well as a specialist in food as an essential factor in man's well-being. This need for a more business-like approach is especially evident in the hospital field, where the growing demand of the employee for full cash salary instead of part cash with full maintenance, makes emphasis on the sales appeal of food a necessity. The large proportion of hospital dietitians in the Association has often led critics to say that the interests of the American Dietetic Association are centered too much around this phase of dietetics. With the change in hospital food service to meet the needs of the times, the objectives of all administrative dietitians approach a common goal—the preparation of good food to be sold at reasonable prices in attractive surroundings. With the present emphasis on the normal diet and the relegation of special diets to their proper position as variants of the normal, the therapeutic dietitian is able to think with the others in terms of palatable foods with eye and taste appeal.

The intensified and nationwide interest in nutrition has brought added responsibilities for community service. Charitable institutions long without dietitians are asking for assistance in planning better use of limited budgets. Social and health agencies are enlarging their programs to include consultant service for professional personnel and practical instruction in nutrition for the families under their guidance.

Peace has not brought an end to problems in nutrition, rather has it introduced new varieties of its own. We met the difficulties of the war years with courage and gained strength which no period of uncertainty can take from us. It would have been sufficient had we kept our place professionally; that we advanced is proof of the basic soundness of the objectives of the American Dietetic Association: "to improve the nutritional status of human beings; to bring about closer cooperation among dietitians and nutritionists and workers in allied fields; to raise the standards of dietary work."

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A STUDY OF PLATE WASTE AS A DIRECTIVE MEASURE IN FOOD CONSERVATION: PART II[1]

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THE purpose of this study of plate waste, together with a review of the literature, and the average food waste in ounces per patient per day were reported in Part I of this study. The procedure for Part II, reported herewith, was as follows:

Menus for the regular diets of the clinic and private patients were planned for 14 days. This same set of menus was used three times.

During the first two weeks a group of clinic patients were observed who represented a cross-section of hospital patients—including surgical cases; some fracture cases; ear, eye, or nose infections; and those suffering from complications due to old age.

The second two weeks another group of clinic patients and a group of private patients who selected their menus from the choices available were observed, namely, obstetrical patients and others not acutely ill.

The third two weeks, both clinic and private patients (obstetrical patients) were observed, and the two groups were offered the same opportunities for selection of foods.

The results, when tabulated, indicated the plate waste of a group of private patients (selective diets), a group of clinic patients (no selection), and a group of clinic patients who had opportunities for selection.

All food was weighed before being sent to the floor kitchen and the weight of the food not served was subtracted from it, thus the net weight of food served to the patients was obtained. When the trays were returned to the floor kitchen, each food item was kept separate in one of the No. 10 cans provided for that purpose. Each can had been numbered and weighed previously so that the net weight of the food returned could be determined without reweighing the container.

Daily records were kept and the average daily waste per patient and for the three groups was calculated.

RESULTS AND DISCUSSION

The results were as follows: For clinic patients 10.3 oz. was the average daily waste; for private patients (selective diets) 7.1 oz., and for clinic patients who had opportunities for selection, 5.8 oz. per patient. There was a marked difference in the average daily waste figures for the three groups. The greatest variation is shown in the waste for the breakfast meal, namely, 3.2 oz. for each patient in the clinic group, 1.4 oz. for the private patients (selective diets) and 1.2 oz. for the clinic patients who were offered selective diets. Breakfast cereals made up the bulk of this waste. When the diets were not selective, cereal was always on the trays of the clinic patients, but when offered as a choice to the patients on the selective diets cereal was not always selected, thus the reduction in waste.

A variation of 1.7 oz. between the highest and the lowest group was found in the average waste of the noon meal. The highest waste, 3.7 oz., was shown for the group of clinic patients offered no choice of foods; and the lowest, 2.0 oz., for the clinic group offered a choice. The figure for the private patients was 2.3 oz. The same menu given to the clinic group was also offered as part of the selective foods for the other two groups. This opportunity for selection was the influencing factor in the decrease of the average waste for the noon meal.

For the supper meal, the average waste for the clinic group was 3.4 oz., for the private patients (selected diets) 3.4 oz., and for the clinic patients (selected diets) 2.6 oz. Waste figures for this meal did not vary as did those for the breakfast and noon meals. For the two groups of patients on selective diets the waste for the supper meal was more than for the breakfast or noon meal. Choice of food was not the influencing factor, but the foods offered on the menu for the supper meal were those not generally accepted by patients, regardless of the opportunity for choice.

In order to obtain information which might aid in more effective menu planning and the elimination of some of the plate waste, several tabulations were made of the character or "identity" of the waste.

In order to make a comparison of the waste of different foods the results of the study were calculated so that the foods returned could be compared on a basis of equal value, that is, the amount of each food returned was divided by the amount of the food served. The resulting percentage of each individual food was tabulated according to classes, *i.e.*, meats, meat substitutes, potatoes, cooked vegetables, vegetable salads, fruit salads, salad dressings, fruits, fruit juices, eggs, desserts, cooked cereal, dry cereal, soup, bread, butter, milk, and cream. The frequency distribution (Chart 1) of the 18 classifications was determined by the average waste of each food class.

The mean of each of the three frequency distributions was figured so that a division could be made to represent the foods that were returned in larger amounts (above the mean) and those returned in smaller amounts (below the mean). The mean for the group of clinic patients was 22.0 per cent; for the private patients (selected diets) 19.0 per cent; and for the clinic patients on selected diets, 13.0 per cent. The range of 9.0 per cent shows that the group of clinic patients on their usual diet wasted more food than did those who selected their diets (Chart 1).

The figures on foods returned in smaller amounts by the group of clinic patients tend to cluster around the mean, rather than to be evenly distributed as in the other two groups. This is probably due to the fact that the tray with all of the rejected foods was returned, rather than just one or two foods.

A direct comparison of the amount of waste of one food class with that of another was not undertaken in this study; instead, the food classes returned in smaller amount (below the mean) were compared with those classes returned in larger amounts (above the mean). Certain food classes returned in larger amounts by all three groups of patients were: salad dressings, vegetable salads, cereals, bread and butter. Soups and cooked cereals were returned in larger amounts by the clinic group and the private patient group but were below the mean for the clinic group on selected diets. This may have been due to the fact that the clinic patients, given an opportunity for selection, seldom chose these two foods.

Potatoes, meat substitutes, and cooked vegetables are found in approximately the same position in each distribution, that is, around the mean. The fact that all three groups of patients returned these foods in moderate amounts suggested that the waste was due to factors other than selection—possibly size of serving or temperature of food.

The foods returned in smaller amounts (below the mean) consisted of fruit salads (except for clinic group on selected diets) eggs, desserts, meat, fish, poultry, fruits, fruit juices, milk, and cream.

Another comparison of the percentage of waste of the 18 classes of foods appears in Chart 2. The foods returned, or plate waste of any food class for one group of patients,

[1] Part I appeared in this JOURNAL for November 1945.

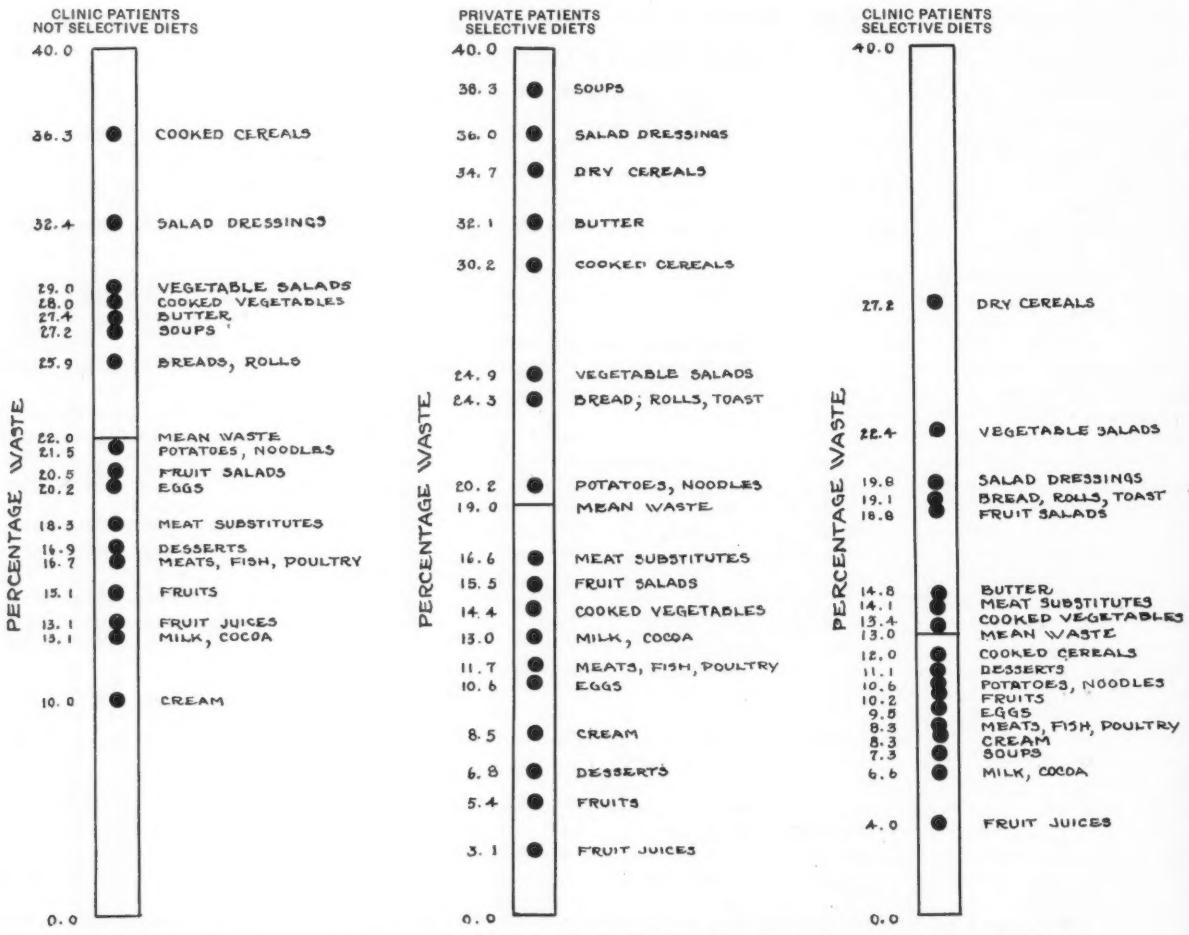

CHART 1. PERCENTAGE WASTE OF THE VARIOUS FOOD CLASSES CHARTED ABOVE AND BELOW THE MEAN

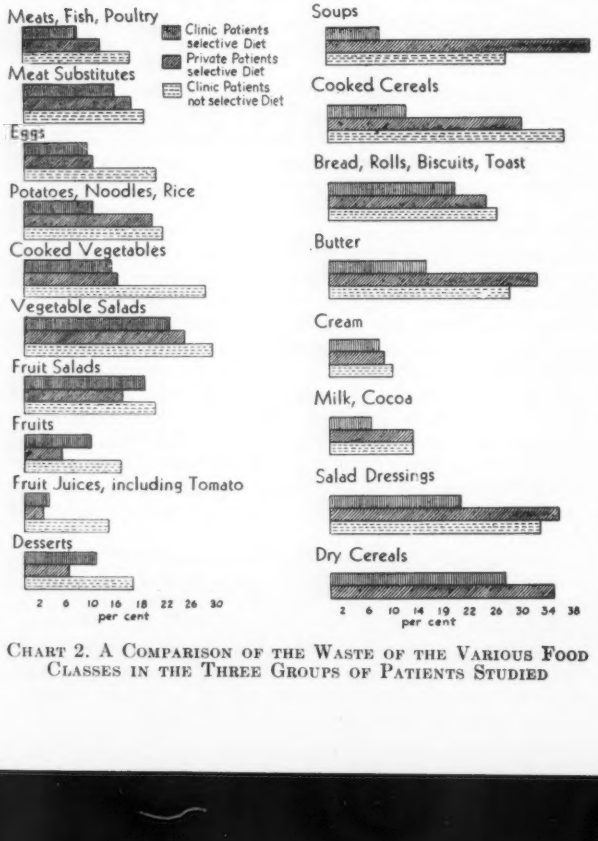

CHART 2. A COMPARISON OF THE WASTE OF THE VARIOUS FOOD CLASSES IN THE THREE GROUPS OF PATIENTS STUDIED

can be readily compared with the percentage return of that same food for the other two groups. This is perhaps a more graphic illustration of the points brought out in Chart 1. Note that the wastage of certain foods on the whole was similar in all groups: salad dressings, cooked cereals, vegetable salads, cooked vegetables, soups, dry cereal, bread and butter.

In Chart 1 the foods listed below the mean—cream, milk, fruit juices, fruits, meat, fish, poultry, desserts, eggs, and potatoes—are the same for the three groups studied but when presented in the graphic illustration in Chart 2 it is easily seen that the amount of the waste for the three groups is not the same—the waste for the clinic patients on the selective diet being less than that for the clinic patients on the general diet.

The results shown on this chart again bring out the fact that the practice of permitting selection of food can be a determining factor in the reduction of food waste.

POPULARITY OF FOODS

A study was then made of the popularity of the foods offered patients on selective diets. All foods offered on the menus served during the study were grouped according to the following classifications: desserts, meats, fruit salads, fruits, vegetables, vegetable salads, fruit juices, miscellaneous items, meat substitutes and other main dishes, potatoes and rice and noodles, dry cereals, cooked cereals, soups, and eggs.

Two figures were recorded for each food: the number of

patients who chose each food; and the number of patients offered that choice. In order to make a comparison, the percentage of each food selected was determined by dividing the number of the servings by the total number of the patients served. From these results the figures listed in Tables 1–14 were assembled to illustrate the comparative popularity of the various foods.

Desserts vary little in popularity (Table 1). There is a gradual rise from the degree of acceptance of baked rice pudding and apple betty, to the more popular dishes such as ice cream, apple pie, and berry cobbler.

TABLE 1. COMPARATIVE POPULARITY OF DESSERTS

Berry cobbler	75.0
Brownies	74.2
Apple pie	72.7
Fruit Jello	70.5
Ice cream	70.2
Peach pie	69.2
Chocolate pie	66.6
Dutch apple cake	65.3
Butterscotch pudding	62.9
Apple cobbler	58.8
Lemon pudding	58.2
Spice cake	57.5
Chocolate pudding	53.3
Yellow cake	50.5
Gingerbread	48.5
Angel food cake	44.6
Jello sauce	43.3
Prune cake	41.3
Raisin custard	37.9
Chocolate cake	35.4
Baked custard	35.0
Lemon pie	32.3
Floating island	30.0
Bread pudding	29.7
Apple betty	26.9
Iced sheet cake	26.6
Plain cookies	23.0
Pear meringue	22.2
Baked rice pudding	6.2

TABLE 2. COMPARATIVE POPULARITY OF MEATS

Fried ham	96.8
Chicken and vegetable pie	84.6
Ham loaf	82.7
Chicken pie with sweet potato top	77.7
Swiss steak	75.8
Beef pattie with mushrooms	74.1
Roast beef	66.6
Baked ham	65.5
Bacon	63.0
Chicken chop suey	60.6
Lamb cubes and vegetables	56.2
Creamed chipped beef	55.3
Baked liver	55.8
Hamburgers	46.6
Chicken and noodles	46.6
Creamed sweetbreads	45.7
Pork chops	45.0
Creamed chicken	44.5
Veal cubes and peas	42.8
Veal pie	41.3
Baked fish	38.6
Fried fish	33.8
Pig sausages	30.1
Salmon biscuit roll	25.8
Liver and vegetable pie	17.1
Lamb patties	11.5

Fried ham, chicken pie, ham loaf, Swiss steak, beef patties, and roast beef reach the top of the list of meats (Table 2), with salmon biscuit roll, liver and vegetable pie, and lamb patties at the bottom.

A fresh fruit salad is always a popular selection (Table 3). Baked apples, apple sauce, or plain grapefruit are not so popular as the other fruit dishes offered (Table 4).

Eggplant, broiled tomatoes, and broccoli, are not only difficult to serve to patients, but are low in the list of vegetables in popularity (Table 5). Asparagus, fresh green beans, corn, Lima beans, carrot strips, Harvard beets, carrots and peas were selected by 71 to 87 per cent of the patients.

Some of the vegetable salads (Table 6) are popular—lettuce when dressed up with sliced radishes or hard-cooked eggs, even plain head lettuce and sliced tomatoes. The high percentage of waste found in this study may have been due to the size of the serving.

Orange juice is the juice most widely accepted. Tomato, grape and grapefruit juice were chosen by almost 50 per cent of the patients, while apple juice appears on the list with only 20 per cent acceptance (Table 7).

TABLE 3. COMPARATIVE POPULARITY OF FRUIT SALADS

Fresh fruit salad	93.5
Sliced orange	84.3
Peach and cottage cheese	80.0
Waldorf salad	79.3
Cottage cheese and fruit	39.3
Grapefruit salad	37.1

TABLE 4. COMPARATIVE POPULARITY OF FRUITS

Sliced oranges	77.5
Fresh fruit cup	77.0
Royal Ann cherries	73.9
Fresh pineapple	68.8
Orange half	65.5
Grapefruit half	56.0
Grapefruit sections	50.5
Apple sauce	47.2
Baked apples	37.5

TABLE 5. COMPARATIVE POPULARITY OF VEGETABLES

Fresh green beans	87.5
Corn and Lima beans	86.9
Harvard beets	77.1
Carrot strips	75.7
Asparagus	72.6
Peas	71.8
Carrots and peas	71.4
Green beans in mushroom sauce	70.5
Spinach	61.3
Beets, buttered	50.0
Broccoli	44.4
Lima beans	44.4
Carrots and celery	36.6
Broiled tomatoes	36.0
Eggplant	21.2

TABLE 6. COMPARATIVE POPULARITY OF VEGETABLE SALADS

Lettuce and hard cooked egg	92.3
Sliced tomato	83.9
Relish plates	80.5
Molded vegetable	77.2
Lettuce and radish	70.2
Head lettuce	62.0
Mixed vegetable	50.0
Carrot and raisin	36.6
Shredded lettuce and carrot	32.2

TABLE 7. COMPARATIVE POPULARITY OF FRUIT JUICES

Orange juice	69.1
Tomato juice	49.7
Grape juice	48.2
Grapefruit juice	45.1
Apple juice	20.8

On the basis of this study, sweet rolls, doughnuts, and cinnamon toast are good suggestions for variation of the breakfast menu, while fried apples and fried mush might well be eliminated from the menu as far as popularity is concerned (Table 8).

Bread and toast are part of the menu of 75 per cent of the patients. Perhaps just half the usual amount should be served when waste is considered.

Milk was selected by 50 per cent, but this figure would be higher if the breakfast meal were not included, since coffee is the popular beverage for breakfast.

There was considerable variation in preferences for the meat substitutes and other main dishes (Table 9). Only 18 per cent selected egg salad sandwiches; about 50 per cent

TABLE 8. COMPARATIVE POPULARITY OF MISCELLANEOUS ITEMS

Sweet rolls	74.7
Doughnuts	70.0
Hard rolls	68.9
Cinnamon toast	61.5
Homemade buns	51.5
French toast	46.2
Chocolate ice cream shake	39.1
Fried apples	32.2
Fried mush	21.2
Milk	52.2
Bread	77.7
Toast	74.5
Cocoa	29.3

TABLE 9. COMPARATIVE POPULARITY OF MEAT SUBSTITUTES AND OTHER MAIN DISHES

Chicken salad	82.6
Baked noodles, cheese and bacon	80.7
Escalloped potatoes and cheese	77.1
Tomato stuffed with cottage cheese	73.9
Deviled egg salad	70.0
Macaroni and cheese	69.4
Ham salad sandwich	60.0
Cottage cheese	60.0
Noodles and chicken	59.4
Chicken salad sandwich	58.6
Boston brown bread sandwiches	56.6
Corn pudding	55.2
Cheese fondue	50.0
Spanish rice	47.0
Eggs goldenrod	45.8
Tuna fish salad sandwich	41.1
Tomato stuffed with chicken salad	40.0
Toasted cheese and bacon sandwich	37.5
Meat ball with spaghetti	36.6
Egg salad sandwich	18.5

TABLE 10. COMPARATIVE POPULARITY OF POTATOES, RICE AND NOODLES

Mashed sweet potatoes with marshmallow	96.8
Browned potatoes	93.5
Creamed potatoes	89.6
Baked potatoes	80.8
Mashed potatoes	80.0
Buttered rice	75.7
Candied sweet potatoes	69.2
Escalloped potatoes	42.1
Buttered potatoes	40.0

TABLE 11. COMPARATIVE POPULARITY OF DRY CEREALS

Corn flakes	61.6
Shredded wheat	51.7
Grapenut flakes	48.0
Wheat Sparkies	43.3
Pep	39.0
Bran flakes	34.7
Shredded Ralston	31.3
Krumbles	28.3

TABLE 12. COMPARATIVE POPULARITY OF COOKED CEREALS

Ralstons	49.2
Wheatena	48.0
Cream of Wheat	42.3
Rolled oats	39.7
Pettijohns	30.7
Farina	25.0

TABLE 13. COMPARATIVE POPULARITY OF SOUPS

Vegetable	72.6
Beef noodle	66.6
Tomato barley	50.0
Cream of pea	34.6
Cream of mushroom	14.7

TABLE 14. COMPARATIVE POPULARITY OF EGGS

Scrambled	67.7
Poached	59.8
Soft cooked	59.4

selected tuna fish salad sandwiches, corn pudding, Spanish rice, eggs goldenrod, chicken salad sandwiches, and baked noodles and chicken; while chicken salad, deviled egg salad, and macaroni and cheese were selected by a larger percentage of the patients.

Potatoes in some form should be a part of the day's menu, since with the exception of buttered and escalloped potatoes they rated 70 to 96 per cent on the popularity scale for potatoes and rice (Table 10).

Only about half the patients selected either dry or cooked cereal; farina and Krumbles were at the bottom of the scale, while only corn flakes and shredded wheat went above the 50 per cent level (Tables 11 and 14).

SUMMARY

A detailed study of the average daily food waste for a group of clinic patients, many acutely ill, showed an average of 10.3 oz. per day for each person served.

The average daily waste of a group of private patients, not acutely ill, and who had some opportunity for selection of their food, was 7.1 oz. for each person served.

A group of clinic patients, not acutely ill, were given the same opportunities for selection as the private patients, with the result that the average daily plate waste was 5.8 oz. per person served.

An analysis of the character or "identity" of the plate waste revealed that fruit juices, fruits, fruit salads, meats, fish and poultry, eggs, desserts, milk and milk drinks were well consumed by the patients. The foods wasted in appreciable quantities were cooked and dry cereals, vegetable salads, lettuce from all salads, cooked vegetables, salad dressings, soups, bread and butter.

The popularity of various foods within the food classifications was compared by figuring the percentage of the patients who selected each food when a choice was offered.

These observations were made in order to obtain information which might serve as a guide to better menu planning and lead to a consequent reduction in food waste.

CONCLUSIONS

1. One method for reducing plate waste in a hospital is to offer the patient some choice in the selection of his foods.

2. From an analysis of the food returned, suggestions for better menu planning can be obtained. The following are applicable to the situation covered by the present study:

Include as often as possible those foods which are well consumed: fruit juices, fruits, fruit salads, meat, fish and poultry, eggs, desserts, milk and milk drinks.

Do not let the desire for variety in menu planning become so great that fancy dishes, difficult to serve, are used, only to be wasted. For example, a salmon biscuit roll was selected by only a few patients and the amount returned was large. If this dish were offered to the patients on the general diet, the loss would be great. Instead, it would be well to serve well-seasoned baked fish and a biscuit. Cheese soufflé or a fluffy omelet likewise may be largely wasted, as the average hospital is unable to convey and serve such delicate foods to the patients in the proper condition.

Determine, if possible, the reasons for the food waste, such as: faulty preparation of food, improper serving temperature, too large portions, or the inclusion of unpopular food items.

Some of the factors pertinent to the problem are as follows:

Cooked Cereal. This needs careful preparation and seasoning and must be served hot (sometimes difficult in large hospitals).

Dry Cereal. The individual boxes contain more than a patient cares to eat, therefore it is better to serve from the large family-size box.

Vegetable Salads. Prepare these in such a way that the patient can eat them with little effort, *i.e.*, serve shredded lettuce rather than a wedge of lettuce. Offer smaller servings. Do not serve a vegetable salad and a cooked vegetable on the same menu.

Lettuce or Garnish. Shred as often as possible, or use small leaf lettuce or parsley. Select a salad dish that is bowl-shaped rather than flat, one which will hold the salad together without the use of lettuce. Attractive cards can be placed on the patient's tray: "The lettuce is part of your salad; eat it also." It may be that an educational program would be of aid here.

Cooked Vegetables. Serve those most popular and avoid the others except on the selective menu. Avoid the use of creamed vegetables and see that all are prepared correctly. When planning menus, if only a fruit salad *or* a cooked vegetable can be included, serve the fruit salad most frequently; when the fruit salad is not offered, serve the most popular cooked vegetables.

Salad Dressing. It is better to use a thin dressing, like French dressing, than mayonnaise. Watch the seasoning of the dressing. Do not eliminate the salad because the dressing is returned; instead, eliminate the dressing except for the vegetable salads.

Soups. Correct any faulty preparation; serve in a container that will keep the soup hot as long as possible. See that the patient is in the proper position to eat the soup.

Bread and Butter. Serve one half slice of bread and a small piece of butter as a general rule. Suitable adjustments may be made for those known to eat more.

3. A study of the plate waste should be a part of the regular routine of the dietary department of a hospital. In this way, large quantities of food wasted and kinds of food being returned frequently can be observed. A careful check should be made of the condition of and the food needs of the patients. The preparation and service of the food may need more careful control.

4. These same principles could be extended to any institution, hotel, or restaurant, or even to the individual home as a measure toward food conservation.

School Lunches. During the past two years a study has been made of school lunches in Birmingham, Leeds, and Surrey to determine their nutritional value and to assess their contribution to the total daily intake of food. Rationing and a ceiling of 5d per child limited the foods served. Eighty per cent of the children took advantage of the cheap milk scheme which provides about ⅓ pint per child per day. Statistics show that this has a considerable effect on the proportion of daily food needs provided at school. The importance of milk supplementation for all, and especially the younger children, is clearly shown. The addition of ⅓ pint of milk raises the nutritive value with the exception of vitamin C up to or above the Board of Education standards for the other nutrients measured. No group met the suggested calorie intake at the dinner meal. *Abstract of Contribution of School Meals to Nutrition of Children by H. G. Bray et al. Lancet (London) 248:637, 1945.*

School Lunches Planned by High School Students. In Blevins Consolidated School, Arkansas, rotating groups of 5 high school students assume the responsibility for serving lunch at the central school with the help of 4 paid workers. This experience is carefully planned and integrated with classroom work. *Abstract of School Lunch Planning—An Experience in Living by Ruth Powell. Education for Victory (U. S. Office of Education, Washington, D. C.) 3:23, 1945.*

Nutrition Education in High School. The increasing interest of young people in their diets may be ascribed to scientific advances in the field of nutrition and the inclusion of more nutrition training in teacher-training institutions. MacAlester College, St. Paul, Minn., is an exponent of progressive education in family life and nutrition. Here science prerequisites are eliminated from the freshman year in favor of a meal planning and preparation course, thus giving the student who drops out before graduation the health advantages of a nutritious diet. *Abstract of Studying Foods in School by Thomas C. Desmond. Hygeia 23:97, 1945.*

80% Extraction Flour. Recent research has revealed how vitamin B_1, riboflavin, nicotinic acid and iron are distributed in the wheat grain. Applying this knowledge, new methods of milling have been developed which are not aimed at a given extraction but instead are directed toward including in the flour the more valuable fractions of wheat which might otherwise be lost. This is the basis of the present 80% extraction flour which eliminates almost all of the bran and gives a more acceptable loaf. *Abstract of article by T. Moran and J. C. Drummond. Lancet (London) 248: 698, 1945.*

Vitamin Deficiencies and the Human Eye. The role of chronic malnutrition in the causation of degenerative disease should be explored, and the eye is an organ which lends itself to such investigation readily. Since the eye as well as other organs is subject to degenerative changes that accompany or provoke senescence, it would be of benefit if degenerative change could be retarded for the body as a whole. The author reasons that good nutrition from childhood on may therefore delay development of presbyopia or lesions such as cataract. Further, astigmatism, longsightedness, and shortsightedness may be preventable through assuring good nutrition of the maternal organism during development of the eye of the embryo. *Abstract of Nutrition and the Human Eye by R. M. Wilder. Sight-Saving Review (New York City) 14: 75, 1944.*

Nutrition and Health. Numerous studies on the improvement of health through better nutrition have been made in India, South Africa, and England, as well as in America. The Burke studies on prenatal nutrition in relation to maternal health, fetal development, and the health of the offspring are examples. Three main factors should be stressed in the practical improvement of health through better nutrition: (1) an appreciation of what good nutrition can contribute to health; (2) a working knowledge of what constitutes a healthful diet at the different stages of life; (3) economic ability to provide a nutritious diet. *Abstract of The Improvement of Health Through Better Nutrition by Fredrick J. Stare. Journal-Lancet 65: 65, 1945.*

Food and Childbirth. Food needs in this field have been relatively unexplored. Only liquid foods should be taken during active labor. Restricted liquid diets exclude not only foods that are in solid form when eaten but also milk and its products which form solids in the stomach. *Abstract from Food During Labor and the Puerperal State. The Child (U. S. Children's Bureau, Washington, D. C.) 9: 169, 1945. A limited number of reprints of this article are available for distribution.*

SOME PICTURES OF FOOD CONSUMPTION IN THE UNITED STATES: Part II. 1860 to 1941[1]

CALLA VAN SYCKLE

IN THE latter half of the nineteenth century we find systematic investigations into the cost of living of wage earners being made by state and federal labor bureaus. In some of these, studies of food consumption are included. It is in this period, too, that we find emerging an interest in studies of the nutritional values of American dietaries, in the "pecuniary economy" of food, and in planning agricultural production to meet nutritional needs.

W. O. Atwater was an enthusiastic pioneer in this new field of investigation. Working with the Massachusetts Bureau of Statistics of Labor as a director of Storrs Agricultural Experiment Station, Connecticut, and as Chief of the U. S. Department of Agriculture Office of Experiment Stations, he led in developing a rapidly increasing number of dietary studies in different sections of the country. In the 1894–95 Experiment Station Report he wrote, "This kind of inquiry is today well under way in several parts of the world. It represents the beginning of a science, that of comparative nutrition of mankind, the comparisons being made by race, class, occupation, income, and social condition." The emphasis in reporting these dietaries was placed on the protein, carbohydrate, and fat content of the diet, evaluated by the standards of the time. Nearly all of the studies prior to 1900 were of wage earners and low-salaried workers and there are more for New England than for other sections.

The basic standard for the American table—the standard toward which families moved as soon as economic conditions or technological developments permitted—remained much the same up to 1900. It included meat in relatively large quantities, with beef predominating and pork second in popularity; potatoes, cabbage, onions, and other fresh vegetables in season and in moderate amounts; a variety of fresh fruits in summer but chiefly apples in winter; white bread and rolls, cakes and pies; butter, eggs, milk for baking and relatively moderate or small amounts for drinking; preserves, coffee and tea. A diet high in meat, sweets, and white flour foods represented a traditionally high standard of living to the emigrants from the British Isles, Ireland, Northern European and Scandinavian countries who made up the bulk of our population.

Comparative studies of dietaries of similar groups from 35 to 110 years apart in the nineteenth and twentieth centuries show that certain modifications of this traditional food pattern have taken place. Meat is used less, and milk, vegetables and fruit have become more important. Cereal foods and potatoes have given way to some extent to green and succulent vegetables which formerly were not available the year round.

A number of influences can be cited which have helped to bring about these modifications: (1) the improvement in palatability as well as in availability of dairy and vegetable products through developments in long distance transportation facilities, and preservation and storage methods; (2) changes in real income; (3) new fashions in foods and food practices such as a fruit, cereal, and coffee breakfast in place of the heavier meat breakfast; (4) the development of popular interest in nutrition; (5) emphasis by many physicians and nutrition specialists on the "harmfulness" or extravagance of an exaggerated meat diet and the need for fruits and vegetables to furnish minerals and roughage in the diet, and later, emphasis on mineral and vitamin values of dairy products, fruits and vegetables; (6) the spreading of nutrition propaganda by advertisers; (7) the development of year-round and winter vegetable garden acreages in the South and West.

[1] Part I appeared in this JOURNAL for September-October 1945.

THE PERIOD 1860–1900

The period 1860–1900 was characterized by tremendous developments in manufacturing, commerce, and agriculture. Rapid disposal of the public lands following the Homestead Act of 1862 led to great expansion of farming area. The Civil War had stimulated the use of farm machinery to replace farm labor and with the widespread use of new techniques, farms became more specialized, and rural life less self-sufficient. Railroad mileage increased nearly four times from 1870 to 1900 and great improvements were made in shipping and terminal facilities.[2] These developments led to the commercialization of agriculture and a rapidly receding frontier. By 1900 the frontier had become a factor of minor importance in determining living conditions in this country.

By 1870 refrigerator cars were in use and four artificial ice plants had been established. By 1890 the number of these ice plants had increased to 222.[3] "The spread of mechanical refrigeration meant not only more efficient production of ice for shipping fruits and vegetables from southern points, it meant cheaper ice in the South and contributed to cleaner ice in the North." In the last quarter of the century supplies of tropical fruits were increased by the establishment of fast fruit steamers. The use of cold-storage houses for fruits and vegetables was increasing rapidly. The use of refrigeration for shipping and storage meant increased supplies of fresh meat, sea food, and dairy products also. The rapid development of the canning industry, following the stimulus of the Civil War demand, made supplies of many perishable foods available the year round.

As manufacturing industries and commerce expanded, urbanization of population increased. In 1860, 16.1 per cent of the population was living in communities of 8000 or more inhabitants. By 1900 this proportion had more than doubled, and a large sector of the population was dependent on farmers and food manufacturers for the greater part of their food supply.

The proportion of workers gainfully employed in agriculture decreased, while the proportion employed in manufacturing and mechanical pursuits and in trade and transportation increased. As a larger proportion of the population became dependent on money wages, federal and state governments became increasingly interested in working and living conditions of families of wage earners. Many studies picturing food consumption of families of wage earners in manufacturing centers were made from 1860 to 1900. The following examples of dietaries are thus largely those of wage earners; they show regional differences and the contrast between 1860–1900 and the present, rather than contrasts between levels of living.

Diets of Wage Earners' Families. From 1860 to 1900 a number of studies of the cost of living of wage earners' families were made, but few of them give detailed accounts of foods used. Those that do usually include only foods purchased; for example, in investigations of the cost of living among wage earners by the Massachusetts Bureau of Statistics of Labor, families were asked to state quantities

[2] Schmidt, L. B., and Ross, E. D.: Readings in the Economic History of American Agriculture, pp. 334–335. New York: The Macmillan Co., 1925.

[3] Cummings, Richard Osborn: The American and His Food, pp. 62–70. Chicago: University of Chicago Press, 1940.

of specified food items consumed (purchased) in the year. No fruits were listed and no vegetables except potatoes and beans, although in a standard budget set up by the Bureau in 1872[4] both fruit and "general" vegetables were included.

This standard food budget was used in comparing living costs with wages and was presumably based upon customary family food habits. However, only the higher income workers could have afforded it. In 1871 actual yearly earnings of men wage earners in Massachusetts ranged from $360 to $973.[4] The food budget for a family of four for a year would have cost $508.65 according to 1870 prices. A standard budget reflects what is considered as desirable consumption by those drawing up the budget, as well as the practices of those for whom the budget is designed. Then, too, labor bureaus are interested in improving the condition of workmen and it is easier to demonstrate the high cost of living in comparison to wages if the standard budget is a liberal one.

The amounts of the different foods included in the budget for a family of four (Table 1), serve to indicate what was considered a desirable year's food supply in 1872 for such a family.

TABLE 1

Food budget for a wage earner's family of four, Massachusetts, 1872

FOOD ITEM	QUANTITY PER FAMILY PER YEAR
Flour (4 bbl.), *lb.*	784
Rice, *lb.*	15
Meats, total, *lb.*	1000
Fish, fresh and salt, *lb.*	100
Eggs, *doz.*	25
Cheese, *lb.*	25
Milk, *qt.*	275
Butter, *lb.*	150
Lard, *lb.*	100
Sugar, *lb.*	200
Molasses (15 gal.), *lb.*	165
Beans (64 qt.), *lb.*	900
General vegetables	expense only
Fruits (1 bbl.), *lb.*	150
Salt, *pk.*	1
Pepper, *lb.*	¼
Vinegar, *gal.*	1½
Coffee, *lb.*	50
Tea, *lb.*	12

A 1939 study of diets of wage earners' families in industrial centers throughout the United States, 1934–36,[5] dealt with food expenditures on a food-expenditure-unit basis; food budgets for different individuals were developed from earlier dietary studies of urban families spending moderate amounts for food. It is interesting to compare the amounts of food estimated for a family of four in this study with the 1872 budget (Table 2). Since neither the type of work nor the ages of the children for which the Massachusetts budget is designed are given, the following arbitrary selection has been made in combining the quantities of food for the later family: man, 20 to 74 years, at active work; woman, over 20 years, at active work; boy, 13 to 15 years; girl, 8 to 10 years.

The most noticeable differences are in the amounts of meat, eggs, milk, beans, potatoes, and fruit. This comparison overestimates the differences in meat in the two periods because fat meats (bacon and fat salt pork) in the 1939 budget are included with butter and other fats. For the same reason the difference in the estimate for fats other than fat meats is greater than is shown in the table. The 1939 budget allows a pint of milk per day for each of the children and one half pint for each of the adults or three fourths pint per person per day. The 1872 budget allows slightly less than one half pint per person per day. The milk equivalent in *food value* of cheese in both cases is included with the fluid milk. The 1939 budget allows between 4 and 5 eggs per person per week, the 1872 budget between 1 and 2. The larger amounts of potatoes and beans estimated in the earlier budget no doubt reflect a smaller variety of fruits and vegetables commonly available in the market.

No percentage difference in other vegetables and fruits can be figured but it is apparent that the fruit allowance is greatly increased in the later budget and probably that for vegetables other than beans and potatoes. "Other fruit" in the 1939 budget includes canned fruit not shown in the 1872 budget. The added sugar in the canned fruit compensates to some extent for the decreased sugar estimate in 1939. The large amount of molasses used in the earlier period would compensate for some of the calcium and iron obtained in other foods in 1939. The *fuel value* equivalent of molasses was added to that of sugar in comparing the sugar estimates of the two periods. It is quite possible that in setting up the earlier estimates it was assumed that home-produced eggs, vegetables, and fruits, not included in the budget, would be available. Since this was not done in the later estimates the differences for these items may appear to be greater than they actually are.

TABLE 2

Food budget for a wage earner's family of four, United States, 1939, and the percentage change in quantities of similar foods from the Massachusetts budget of 1872

FOOD ITEM	QUANTITY PER FAMILY PER YEAR	INCREASE OR DECREASE (+ OR −) FROM 1872 ALLOWANCES
		%
Flour and cereals, *lb.*	759	−5
Lean meat, poultry, and fish, *lb.*	450	−59
Eggs, *doz.*	75	+200
Milk, *qt.*	546	+54
Butter, other fats, oils, and fat meats, *lb.*	177	−29
Sugar, *lb.*	259	−19
Mature beans, peas, and nuts, *lb.*	51	−58
Potatoes, including sweet potatoes, *lb.*	578	−36
Tomatoes, citrus fruits, *lb.*	200	—
Leafy, green and yellow vegetables, *lb.*	260	—
Other vegetables and fruits, *lb.*	820	—

The differences in these two budgets reflect the decreased emphasis on meat at meals today, and the fact that in the earlier period such foods as lettuce and citrus fruits were viewed as luxuries serving only to please the palate, in contrast to the nutritional value accorded such foods today.

From sixteen accounts of actual expenditures of wage earners' families in the 1872–73 reports of the Massachusetts Bureau of Statistics of Labor, it would seem that many families probably used noticeably less meat, milk, lard, butter, and coffee than the amounts given in the standard budget for 1872, and relatively large amounts of corn meal which is not included in the budget.

Sharp differences prevailed between the food practices of wage earners' families in the South and in New England. In the South much more pork than beef was used. Corn meal was also more important, some families using

[4] Third Annual Report of the Massachusetts Bureau of Statistics of Labor, 1872, pp. 14–31, 108–109.

[5] Stiebeling, H. K., and Phipard, E. F.: USDA Circ. 507, January 1939.

more corn meal than flour. In addition to the vegetables commonly used in New England, cowpeas and turnip greens appear on family food lists.[6]

Boardinghouse Diets of Mill Operatives. Records of dietaries served in boardinghouses to mill operatives[3] give one an idea not only of the food available to wage earners at this time but also of the general preferences prevailing among the different food groups. Commercial establishments undoubtedly had to take account of the general food preferences of their patrons.

A woman worker in a Lowell, Massachusetts, carpet mill gave an account of the bill of fare in her boardinghouse for which she paid $2.25 per week in 1871–72:

> For Breakfast, we have raised biscuit, sometimes pie, cold bread, white and graham, tea or coffee—meat very seldom, but never warm, nor warm potatoes. We have to go to work so early in the morning that there isn't time to get a warm breakfast.
>
> For Dinner, we have meat, potatoes, vegetables, pie or pudding. Tuesday, we have soup or boiled dinner. Wednesday, fried meat, ham or sausages. Friday, fish, oysters or clams. Sunday, baked beans and brown bread.
>
> For Supper, we have bread and butter and cake, sauce and tea—Thursday, melted sugar instead of sauce. Sometimes, pie for supper.

This boardinghouse was "said to be the best in the city." The fare was no doubt typically American since all the boarders were of American parentage.

Reports of similar dietaries[7] show that beef and pork, both fresh and cured, flour, potatoes, sugar and molasses, butter and lard, and milk were the year-round mainstays. Beef was definitely the preferred meat. Veal and lamb at the same or lower prices were served in only two boardinghouses. Since these dietaries were served to adults, it would seem that the amount of meat given in the 1872 standard budget (Table 1) for two adults and two children was unduly high to be representative of even the higher income group of wage earners' families.

One dietary for mill operatives in Maryland, 1884, is available.[8] In this factory boardinghouse 59 women boarded for 6 months, an average of 26.25 days each month. Comparing this dietary with the above-mentioned dietary served chiefly to women mill workers in Lowell, Massachusetts, we find the Maryland women having less meat altogether, including less beef, but twice as much pork, both fresh and cured, and less milk, cheese, butter and lard, but more sugar and syrup, fewer potatoes, considerably more "other vegetables" and a much greater variety of vegetables. The Maryland dietary apparently covered the months when many fresh vegetables were available; in this area, too, there is an earlier and longer garden season than in Massachusetts. The Massachusetts dietary with which the Maryland dietary has been compared was probably a fall or winter one. However, another dietary in the same Massachusetts report does include summer vegetables, but only in relatively small amounts. Dried beans and peas, not in the Maryland list of foods, contributed largely to the vegetable content of the Massachusetts dietaries. The smaller amount of butter and lard in the Maryland dietary was apparently compensated for, at least in good measure, by the larger amount of fat pork. The Maryland women apparently were served a smaller amount but a greater variety of fruit. The mainstays of the Maryland dietary were fresh beef, cured pork, flour, sugar and syrup, butter and lard, potatoes and cabbage. Beef was, as with the Massachusetts group, the meat used in largest quantity.

The American Diet in General. President Eliot of Harvard University in "The Forgotten Millions," *Century Magazine*, 1890, describes the life of the people of Mount Desert, a village of 1400 population, as an illustration of the "commonest modes of life in the United States" of that day. He lists as staples of the diet: wheat flour, corn meal, sugar, butter, lard, stewed fruit, beans, salt pork, salt and spices. Fresh meat was "too costly for common use except in midwinter, when large pieces can be bought at wholesale prices and kept frozen"; eggs were too useful for barter at the store to be eaten freely (presumably these were shipped to a city market); and chickens must be sold to summer residents or to city markets. Premature decay in young people's teeth was noticeable in many cases. "They like hot bread made in fifteen minutes by the aid of chemical baking-powders; they are used to cakes, doughnuts, pies, and sweet sauces."

Atwater,[9] whose influence on dietary investigations has been great, drew conclusions about the character of the American diet in the 1880's from studies of around 50 dietaries of several hundred people in private families and boardinghouses, mostly in New England, and from the Army and Navy rations of the period. He emphasized the one-sidedness of the American dietary: "We are a generation of fat, starch and sugar eaters." He believed that the "food of the people in this country is apt to be considerably in excess of the demands for nourishment (energy). The excess is made up largely of meats, especially of the fatter kinds, and of sweetmeats, including sugar."

Proteins, fats, and carbohydrates were considered the three most important classes of nutrients at this time. Atwater's conclusions about the American diet were based upon comparisons with European standards, chiefly those proposed by the German physiological chemists, Voit and his followers, and on studies of European dietaries. He adjusted the German standards to conform more nearly to American eating habits, increasing the total calories, but still felt that Americans ate too much and spent too much for food. They did so, in his opinion, because of our abundant and one-sided food production, the toothsomeness of foods containing fat and sugar, and the widespread ignorance of the "laws of food economy." At the same time he said "The better wages of the American working-man, as compared with the European, the larger amount of work he turns off in a day or a year, and his more nutritious food are, I believe, inseparably connected."

Atwater suggested as remedies for the faults in the American dietary: (1) reforms in agricultural production—farmers should grow crops with more protein and produce leaner meat animals; (2) reforms in dietary practices—people should learn the nutritive values and proper use of foods, better and more economical cooking methods, the most economical sources of the required nutrients, and accept the "doctrine that economy is respectable." The results of these reforms, he believed, would be pecuniary gain for both farmers and consumers, and a diet better balanced in respect to protein and energy foods.

He extolled the New England food combinations, codfish and potatoes, pork and beans: "the thrifty inhabitants of New England supplement the fat of their pork with the protein of beans and the carbohydrates of potatoes, and supplement maize-meal and wheat flour with the protein of codfish and mackerel; and while subsisting largely upon such frugal but rational diets, are well nourished, physically strong, and distinguished for their intellectual and moral

[6] Wait, Charles E.: Nutrition Investigations at the University of Tennessee in 1896 and 1897. USDA Off. of Exper. Sta. Bull. 53.

[7] Seventeenth Report of the Massachusetts Bureau of Statistics of Labor, 1886, pp. 270–278.

[8] Atkinson, Edward: The Distribution of Products, pp. 158–161. New York: G. P. Putnam's Sons, 1885.

[9] Atwater, W. O.: What we should eat. Century Magazine, June 1888, p. 259.

force."[10] In both popular and scientific writings he emphasized his belief that "the plain substantial food materials, like the cheaper cuts of meat and fish, milk, flour, corn meal, oatmeal, beans and potatoes are as well fitted for the nourishment of people in good health as are any of the costlier ingredients."[11]

COMPARISON OF FOOD IN A CONNECTICUT STUDENT BOARDING CLUB, 1893, WITH THAT IN AN IOWA STATE COLLEGE COOPERATIVE DORMITORY, 1940–41

One of the early dietary studies by Atwater[12] at Storrs Agricultural Experiment Station in the spring of 1893, was of a men's college boarding club. This dietary may be compared with one served in 1940–41 in the men's cooperative dormitory, Iowa State College, from food records available through the courtesy of the Institutional Management Department.

A number of foods in the latter dietary which are now available at any season do not appear at all in the earlier dietary: for example, ice cream, prepared breakfast cereals, marshmallows, gelatin dessert, frozen foods, canned fruit juice, and tomato juice. In the food groups and individual items available in both periods significant differences between the two dietaries occur. Less than half as much meat was apparently used by the students in 1940–41, a difference which is probably exaggerated since nearly all of the meat purchased in 1940–41 was either ground meat, boned, or boneless cuts. This was not true of the earlier dietary. Within the group of meats we find a very greatly decreased use of beef and veal in 1940–41, an increased use of fresh pork and no change in use of cured pork. The greater importance of fresh pork and the fact that no lamb is used in the later period may in part be the result of the difference in region. Frankfurters and luncheon meats are important in the 1940–41 dietary but do not appear at all in the earlier one. Much less poultry is used in the later dietary but in relation to the total amount of meat, poultry, and fish it is nearly as important in 1940–41 as in 1893. We would expect less fish to be used in Iowa than in New England. However, although the amount is smaller, it makes up a larger proportion of the meat, poultry and fish total in the Iowa dietary than in the earlier Connecticut one.

About twice as many eggs were used in the earlier dietary but less than half as much milk. The Iowa students in 1940–41 consumed more than a quart of milk (whole plus skim) a day in addition to milk products in the form of cheese and ice cream, while the Connecticut students in 1893 consumed about seven eighths of a pint. Both groups consumed about the same amount of butter but more lard was used in the earlier period.

If bread is reduced to its flour equivalent (two thirds the weight as bread) and the other cereal foods are added, we find a 21 per cent reduction in the use of cereals in 1940–41 compared to 1893. The greater use of sugar and other sweets in the earlier period as well as the greater use of lard and cereals may be in part the result of more extensive use of baked products for dessert in the earlier period in contrast to more use of fruit for dessert in the later period; also, sugar was purchased in the later period for use in ice cream and sweet rolls (about one third of the total quantity of bread and rolls was in the form of sweet rolls) and in canned fruits.

[10] Atwater, W. O.: The pecuniary economy of food. Century Magazine, January 1888, p. 442.

[11] Atwater, W. O.: USDA Farmers' Bull. 142, October 1901, p. 42.

[12] Sixth Annual Report, Storrs (Conn.) Agric. Exper. Sta., 1893, pp. 185–186.

The Iowa students in 1940–41 used more than 50 per cent more potatoes, 8 times as much fresh vegetables, and more than twice as much canned vegetables. They also had a much greater variety of vegetables, both fresh and canned. With the exception of a relatively small amount of cabbage, no leafy vegetables appear in the earlier dietary. In the later dietary, in addition to about 13 lb. lettuce and cabbage, about 11 lb. canned spinach and sauerkraut were eaten per student per year. The use of dried beans appears to be about the same in the two periods although in the later period nearly half of the total dry weight equivalent was purchased canned in contrast to none in 1893.

The total fresh fruit figures are not comparable since only the edible portion of bananas and pineapple have been included in the 1893 dietary. If we take this fact into consideration, the consumption of fresh fruit is still somewhat higher in the later dietary. Certain of the fresh fruits listed in the 1940–41 dietary were probably not available in the earlier period at the time the study was made (April 13–May 11), *e.g.*, apples, strawberries, grapes, cantaloupe, which makes any comparison of individual fruits undesirable. Grapefruit does not appear in the earlier dietary nor fresh pineapple in the later one. The much greater use of canned fruit (230 per cent more) by the 1940–41 students has already been mentioned. The same amount of dried fruit was used in the two periods but the items included were different. No dried apples were used in the later period. It is probable that coffee was used by the Connecticut students, but was not listed because the chief purpose of the study was to analyze the diet for nutritive value. The same reason may explain the omission of pickles.

Other dietaries for the same period, place, and time of year show that a wider variety of vegetables than the men students used was on the market in 1893. For example, in the dietary of "A College Ladies' Eating Club" (Connecticut) for April 1894,[13] we find in addition to the foods listed for the men's club (1893) that carrots, parsnips, turnips, spinach, as well as cranberries, gelatin, macaroni, and chocolate were used. The wider variety of vegetables used by the "ladies" suggests a sex difference in food preferences. A similar difference in food preferences between men and women students today is suggested by the much greater per capita amounts of fresh vegetables, particularly lettuce, used by the women students at Ames.

COMPARISON OF FOOD CONSUMPTION BY WAGE EARNERS' FAMILIES, 1900–02, 1917–18, AND 1934–36

Three cost-of-living studies by the Federal Bureau of Labor Statistics afford an opportunity to compare the food consumption of a large number of families of similar economic status and location at different periods of time. These are the studies of expenditures of families of wage earners and low-salaried clerical workers in the United States in 1900–02, 1917–18, and 1934–36. Comparison of the findings is complicated by the fact that the plans for the three studies have varied. There are, for example, differences in eligibility requirements of families to be included, in coverage of the different regions, and in the terms in which the food consumption data are presented.

In the 1900–02 study detailed food consumption data were obtained from 2567 families, which included 1043 "normal" families, *i.e.*, families consisting of a husband at work, a wife, 0 to 5 children with none over 14 years of age, and no dependent lodger or servant. Both white and

[13] Seventh Annual Report, Storrs (Conn.) Agric. Exper. Sta., 1894, pp. 191–193.

Negro families were included. For the remaining families (1524), the only basis of selection was the ability to give information sought in the desired detail.

In 1917–18 only white families consisting of husband, wife, and at least one child who was not a boarder or lodger were included. Families with boarders were excluded. Detailed information on food consumption was reported for 11,900 families.

In the 1934–36 study, an eligible family comprised two or more persons, members of the same household and pooling their income. The 1934–36 eligibility requirements were more like the 1900–02 requirements than the 1917–18. In both the earlier and the later studies two-person families or family groups not including a married couple could be included as well as families having boarders. The number of boarders allowed was limited in the 1934–36 study, and the study was limited to white families except in the Middle Atlantic region and the South, and the food consumption of white and Negro families was shown separately. Food records of one week in four different seasons from which yearly estimates of detailed food consumption were made, were obtained from 1842 white families in four different regions.

All three studies included families whose heads were of foreign birth. The 1900–02 study excluded families with annual incomes over $1,200; the 1917–18 study, slum or charity families. The 1934–36 study required a minimum family income of $500 per year and excluded families on relief at any time during the year. Clerical workers earning more than $2,000 per year were not eligible.

In the 1917–18 study, consumption data are presented on a food consumption unit basis. This is also true for the 1043 "normal" families of the 1900–02 study. However, in this study, food consumption data by region for 2567 families are presented on a family basis with average size of family given so that per capita figures can be computed. In 1934–36, quantities of food consumed are presented on a per capita basis. Information presented in the 1917–18 report makes it possible to change the food data from a consumption unit basis to per capita quantities.

In the USDA circular *Diets of Families of Employed Wage Earners and Clerical Workers in Cities*, quantitative estimates of foods consumed per capita in one year (1934–36) by white families in three different regions are presented: North Atlantic, East South Central, and Pacific. Regions that approximate these which were covered in the two earlier studies are North Atlantic, South Central, and West (which includes the Pacific region). There are discrepancies between the three studies in the states, cities, and number of families covered in each region. In spite of this and the differences in family eligibility it has seemed worth-while to make comparisons in food consumption from one period to another. The comparisons, while rough, indicate the changes in food consumption taking place since 1900 in these population groups and show the persistence of regional food habits. For more precise comparisons, it is necessary to have access to the original data.

Per capita food consumption in 1900–02 was computed for the regions selected from data on family consumption and average size of family. In the 1917–18 study data on average size of family and number of families included in the study were available by cities. On the assumption that the average family size for the different cities was the same for the 11,900 families furnishing food consumption reports as for the 12,096 families included in the total study, average size of family for each region was computed. Using these averages, food consumption per family in the regions selected was reduced to average consumption per person. The 1934–36 data did not require adjusting.

Comparison of the movement in consumption of specific food items between the different periods is facilitated by reducing quantities consumed to relatives, likewise differences in the movement in consumption of specific food items between regions. The downward movement in nearly all food items except milk, 1900–02 to 1917–18, and the upward movement in the same items, 1917–18 to 1934–36, are probably the result in part of the differences in the family types included in the three studies. It is probable that both the 1900–02 and the 1934–36 studies included a larger proportion of adults than the 1917–18 study which would result in a higher per capita consumption of many foods. Another influence which should be remembered in interpreting the food consumption trends is that conservation of food supplies was the patriotic order of the day in 1917–18. Also food prices rose more rapidly in the war years than prices of most other goods. The relative purchasing power of employed wage earners in manufacturing industries was not much changed between 1900–02 and 1917–18. The index of purchasing power, based on average annual earnings of employed workers and the index for cost of goods purchased by wage earners, was 95 in 1900–02 as compared to 100 in 1917–18. Food prices during the years just previous to 1917–18 (1913 to 1917–18) "had advanced more rapidly than any other retail prices." This shift in price relationships of household commodities probably had a restraining influence on food purchases.

In the years between 1917–18 and 1934–36, widespread educational programs had emphasized the values of "protective" foods, particularly milk, vegetables, and fruit. Higher real incomes in these groups of employed workers and educational influences are no doubt important factors in the large increases shown in consumption of vegetables and fruits, particularly canned fruit and citrus fruits from 1917–18 to 1934–36.

The downward trend in the consumption of meat (which includes bacon and salt pork), 1900–02 to 1934–36, seems well established in the North Atlantic region and the southern region, but doubtful in the Pacific area. Between the earlier and later periods comparatively little change in poultry consumption is shown but the use of fish increased. Egg consumption increased in every region, the greatest relative increase being in the Pacific area.

A decided upward trend in milk and cheese consumption is noticeable in all areas. The use of butter and other table fats, shortening and oils, shows little change in any of the three regions, with the exception of the decided drop in 1917–18 in the southern region. Sugar consumption dropped in 1917–18 in each region, but in 1934–36 it was above the 1900–02 level. Molasses and syrup consumption, on the other hand, has decreased in every region. When the sugar equivalent in fuel value of molasses is added to sugar, there have been increases in total sugar consumption in the southern region and the Pacific Coast 1900–02 to 1934–36, but practically no change in the North Atlantic area. It is, of course, likely that sugar consumption increased in all areas due to the purchase of more manufactured items, as soft drinks and canned fruits, which contain added sugar. These groups of employed workers were apparently consuming as much cereal food in 1934–36 as they did in 1900–02, although more bread and less flour were purchased. Characteristically, the southern region shows less decrease in flour consumption and less increase in bread consumption than the other regions. Potato consumption was apparently little changed in these groups of families from one period to another.

CONCLUSION

The food consumption behavior of a people is influenced by long-established customs, by economic conditions, by technological advances, by education, informal and formal, and by promotional efforts of special interest groups. The first three of these factors are probably the most important. What will happen to food consumption in the United States if high level employment is maintained? What, if we are not able to maintain high level employment? How far can our policy-makers squeeze home consumption in favor of foreign consumption of meats, dairy products, and other exportable foods during the transition years just ahead? How much educational and promotional effort will be needed to make such squeezing acceptable to consumers? Such questions are important to dietitians as well as to agriculture, business, food and relief agencies.

Joseph F. Davis[14] points out that "between the body's need for nutrients and the consumer's wants for food there is a gap in understanding that needs to be bridged." Many types of studies are needed which will contribute to such understanding: statistical studies, properly planned and intelligently analyzed, of changes in food consumption with changes in income; studies of differences in food consumption because of differences in family type, occupation, or location; studies of nutritional inadequacy and the factors responsible; studies of food preferences and the factors influencing them.

The pictures presented of food consumption in the United States from colonial times to the present period show that food supplies have generally been looked upon as plentiful, and that a high standard of living for a very large part of our population includes a diet high in meat, sweets, and white flour. Dairy products, fresh fruits and vegetables the year round have become increasingly important. These and other aspects of our food history play their part in determining our food choices, both today and in the future.

[14] Davis, Joseph F.: Nutrition, social science, and public policy. Ann Amer. Acad. Pol. and Soc. Sci., January 1943, pp. 6-9.

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Carotene Stabilization

Carotene is very stable in cacao butter, so that its incorporation with that ingredient in concentrated rations, such as chocolate bars, might afford a satisfactory way of supplying provitamin A. It can also be added in cheese, butter, margarine, peanut butter, other spreads and salad dressings.

Nordihydroguaiaretic acid (ND-GA), with a phospholipid or citric acid, stabilizes the carotene in edible oils. Loss of carotene may be related to destruction of naturally present or added antioxidants during the course of the induction period, rather than to the development of peroxides. With lard, cacao butter and cocoanut oil, under accelerated test, there appears to be no relationship between the accumulation of peroxides and loss of carotene. In cottonseed oil, accumulation of peroxides and loss of carotene proceed simultaneously and begin with storage. Carotene is here destroyed at higher peroxide numbers than in the other oils. The high peroxide numbers may be related to high linoleic acid content. In lard and cottonseed oil, the carotene has practically disappeared at peroxide numbers 20 and 120, respectively, which correspond to the end of the induction period in the Swift stability test.—*Bickoff, E., Williams, K. T., and Sparks, M.: Stabilization of carotene with nordihydroguaiaretic acid and other antioxidants. Oil and Soap 22: 128, May 1945 (abstracted in Food Industries, September 1945).*

Nutritive Values of Proteins as Influenced by Amino Acid Composition

Aside from calories, probably the greatest nutritional need of underfed or starving persons is for protein foodstuffs. Ideally, they should have the highest quality proteins, as represented by meat, fish, milk, eggs and cheese. But these foods are both high in cost and short in supply. In consequence, we must turn to other sources, particularly wheat, corn, oats, rice and legumes. Is it possible that these might be improved and their usefulness extended? Research which the University of Chicago Department of Pathology has carried on for the Army and in cooperation with the Quartermaster Corps indicates that even now a great deal can be done to improve the efficiency and economy of performance in the utilization of protein foods for relief feeding.

We are told that the relief feeding program must depend largely upon the use of cereals. The problem, therefore, is to find a way to supplement or improve the protein efficiency of these foods.

The fundamental studies in the field of amino acids, done by Rose and his associates at the University of Illinois, have been particularly significant. Amino acids number approximately 22, of which 8 or 10 are commonly considered essential. The others can be supplied by the metabolism of the body itself, but if these 8 or 10 are not contained in proper amount a protein deficiency will result.

An "artificial protein," modeled after casein, was made from 16 of the synthetic amino acids (including all 10 considered essential to the rat). This mixture, added to a basal ration, when fed to starved rats enables them to regain their lost weight practically as rapidly as when fed high quality protein, if fed under similar conditions. Moreover, when one of a pair of starved rats is fed a ration containing these 16 amino acids and another fed the same ration with one of the essential amino acids missing, the rat eating the 16 amino acids gains his weight back in about 2 weeks, whereas the other, *with only one of the amino acids missing,* continues to lose weight. When, at the end of 10 days, the diets are reversed, the first rat, deprived of one of the essential amino acids, immediately begins to lose weight, whereas the second, now getting all of the amino acids, begins to gain weight rapidly.

This experiment, tried with all of the essential amino acids, gave identical results in every case. The addition (or subtraction) of one of the essential amino acids to a diet determines whether the rat loses or gains weight.

Of particular interest is the fact that when a rat is supplied with all 16 of the amino acids he tends to eat all of his ration daily, whereas his partner, receiving only 15 amino acids, one essential amino acid being absent, consumes less than a half to two thirds of his daily ration. When testing various types of proteins, therefore, if the rats refuse to eat the ration, an amino acid deficiency is immediately suspected.

Having tested artificial amino acids alone, an experiment was begun to find what we could do to remove protein deficiencies in certain foods. Using a bioassay method also under investigation, we found that while starved rats fed corn meal gained only 3 gm. in weight in 7 days, these same rats fed corn meal to which 9 essential amino acids had been added gained 39 gm. in the next 7 days. In other words, the protein nutritive value of corn meal had become equal to that of a high quality protein.

The next attempt was to find ways to make up the protein deficiency in one food by supplementing it with some other inexpensive foods high in the lacking amino acids. An experiment with navy beans will serve to illustrate the findings. By trying various foods known to be high in the amino acids which beans lack, it was found that by adding 10 per cent of sunflower seed to the beans, their protein efficiency could be increased 100 per cent. Wheat and corn germ produced similar results, although in not quite so high a percentage.

This experiment and others in the same vein indicate that as we reveal the amino acid limitations of different foods it should be possible to supplement certain foods with others better supplied with these amino acids. In this way better combinations could be made available and at low cost, for relief feeding purposes.

The big problem is to ascertain what are the amino acid deficiencies in the various foods and then determine what other foods can compensate for these deficiencies. At present, the use of synthetic amino acids is impractical because of cost. In time, however, the synthetic amino acids may become lower in price. At present we must depend upon natural foodstuffs.—*Press release of an address presented by Paul R. Cannon, University of Chicago, at the Food Forum, Chicago, September 25, 1945.*

EFFECT OF FREEZING PRESERVATION AND COOKING ON VITAMIN CONTENT OF GREEN SOYBEANS AND SOYBEAN SPROUTS[1]

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WITHIN recent years green soybeans have appeared on American tables as a vegetable, and are regarded as pleasing, palatable, and nutritious. This bean has long been known to contain protein of relatively high biological value, and some vitamin values of the raw soybean have been reported (1). However, with the exception of a recent report (2), little information is to be found on the vitamin changes that occur in soybeans during blanching, freezing, storage, and cooking. The present study is concerned with these changes in the Giant Green and Bansei varieties, both of which may be grown satisfactorily in the State of New York.

The soybean sprouts used in this study were prepared from the Mukden and Seneca varieties, the seeds of which can be produced in commercial quantities in New York State. As employed in this paper, the term "soybean sprouts" refers to the bean and sprout. They were prepared by Professor M. T. Munn of this station by soaking the beans in water for several hours and then placing them in jars covered with cheesecloth. The jars were then inverted and placed in dark germinator cabinets at 20°C. and at a relative humidity of approximately 90 per cent. The white sprouts, commonly prepared for table use, were obtained in approximately 5 days and measured 1 to 1½ in. in length.

TABLE 1

Changes in nutrients in fresh (green) soybeans after blanching, frozen storage, and cooking

(Results expressed on the wet basis)

	ASCORBIC ACID	CAROTENE	THIAMIN	RIBOFLAVIN	NIACIN	TOTAL SOLIDS
	mg./gm.	*mcg./gm.*	*mcg./gm.*	*mcg./gm.*	*mcg./gm.*	%
Giant Green variety:						
Raw	0.29	3.53	2.44	**	15.0	33.14
Blanched*	0.18	3.22	2.17	**	13.2	28.88
After 6 mo. storage at 0°F	0.17	3.18	2.81	1.5	10.3	34.71
Cooked	0.15	2.98	2.67	1.5	9.4	33.97
Bansei variety:						
Raw	0.25	2.85	2.86	**	14.5	36.61
Blanched*	0.15	2.60	2.80	**	12.5	30.64
After 6 mo. storage at 0°F	0.16	2.78	2.97	2.0	10.9	35.08
Cooked	0.16	2.60	2.66	1.6	8.8	34.36

* The pods were scalded in boiling water for 3 min. to facilitate shelling. Shelled beans were blanched in boiling water for 2 min.

** Samples accidently lost.

METHODS

The beans were blanched in the pod for 3 min. in boiling water to facilitate easy shelling (3). After removal from the pods, they were further blanched for 2 min. in boiling water, and rapidly cooled in water. At this stage the product showed a negative test for catalase (4). Following draining, the beans were packed in cartons, quick-frozen, and stored at 0°F. for 6 months, at the end of which period they were cooked by dropping one pint of the frozen vegetable into one half cup boiling water in an aluminum saucepan (5).

The soybean sprouts were blanched in boiling water for 2 min., drained, and rapidly cooled in water. They were found to show a negative catalase test (4). They were packed in moisture-vaporproof containers, and stored at 0°F. for 6 months. The cooking procedure for the soybean sprouts was the same as that for the green soybeans, except that two thirds cup of water was used.

Vitamin C was determined by the indophenol-xylene extraction method (6), carotene by the diphasic method (7), and thiamin by the thiochrome method (8). Microbiological methods (9, 10) were used for riboflavin and niacin. Total solids were run in the vacuum oven at 70°C. for 48 hr.

TABLE 2

Change in nutrients in soybean sprouts after blanching, frozen storage, and cooking

(Results expressed on the wet basis)

	ASCORBIC ACID	CAROTENE	THIAMIN	RIBOFLAVIN	NIACIN	TOTAL SOLIDS
	mg./gm.	*mcg./gm.*	*mcg./gm.*	*mcg./gm.*	*mcg./gm.*	%
Mukden variety:						
Raw	0.10	1.19	3.19	0.99	15.2	22.83
Blanched	0.05	1.18	2.98	0.82	14.6	20.59
After 6 mo. storage at 0°F	0.03	1.78	2.31	0.81	14.0	20.34
Cooked	0.03	1.19	1.89	1.25	13.6	29.76
Seneca variety:						
Raw	0.10	1.36	2.31	1.05	14.9	29.59
Blanched	0.05	1.28	1.93	0.97	16.2	24.14
After 6 mo. storage at 0°F	0.04	1.55	2.40	0.94	15.4	25.04
Cooked	0.03	1.61	2.30	1.20	15.2	25.01

DISCUSSION AND RESULTS

Table 1 presents the analytical results on the 2 varieties of green soybeans. The ascorbic acid, thiamin, and carotene values of the processed and stored soybeans are about the same as for peas. The storage and cooking losses are moderate and similar to those obtained for other vegetables. In the report of Bedford, *et al.* (2), the ascorbic acid value for the Bansei variety was considerably lower than our value. However, growing conditions in the different sections of the country might account for the difference observed. On the wet basis, the raw Giant Green soybean lost 38 per cent of the ascorbic acid during blanching and cooling, and a total of 48 per cent during the combined operations of processing, storing, and cooking. The results for the Bansei variety were approximately the same.

The results presented in Table 2 for the 2 varieties of soybean sprouts show them to be reasonably good vegetable sources of most of the several vitamins. Ascorbic acid, however, is considerably lower than one would expect for a young sprout, a fact which may possibly be attributed to its growth in the dark. It has been shown (11) that light considerably increases the vitamin C in germinated soybeans. While we obtained considerable quantities of ascorbic acid on hydrogen sulfide regeneration of the raw

[1] This report is based on one of a series of studies supported largely by the Consolidated Edison Company of New York, Inc. The studies are being carried out under the direction of the Research Committee on Food Processing and Storage appointed from the staff of Cornell University, consisting of the following members: Dr. L. A. Maynard, chairman, Dean Sarah G. Blanding, and Drs. C. E. F. Guterman, A. J. Heinicke, and F. H. Rhodes. The soybeans were supplied by the Division of Vegetable Crops of this station. Approved by the Director of the New York State Agricultural Experiment Station for publication as Journal Paper No. 631, May 2, 1945. Received for publication May 7, 1945.

samples, we did not find much on hydrogen sulfide regeneration (12) of the stored or cooked. Each variety lost 50 per cent of the ascorbic acid during blanching and a total of 70 per cent during processing, storage, and cooking.

In the soybean sprouts an apparent increase in carotene during frozen storage was noted as a result of certain of the analyses. However, this work was completed before the use of alcohol-insoluble solids, rather than total solids, was found by one of the authors (13) to be a more accurate base for the calculation of vitamin changes during processing.

SUMMARY

Analytical data are presented on the vitamin changes during processing, frozen storage, and cooking of 2 varieties of green soybeans and 2 varieties of soybean sprouts. Green soybeans lost a total of 48 per cent of their ascorbic acid; the soybean sprouts, a total of 70 per cent. These and other vitamin losses were considered moderate and comparable to those obtained for other vegetables.

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Public Health Nutrition Course

Public Health Nutrition, a special program for community nutrition participation in the public health field, is being continued this fall and winter at Western Reserve University, Dr. Helen A. Hunscher, chairman of the program and professor of home economics, announced in October. Seven nutrition consultants and staff members of their respective state departments of health have registered in the program which began October 1. Under the supervision of Marie Hines, director of dietetics, University Hospitals, Dean Marion Howell, Frances Payne Bolton School of Nursing, and Dr. Hunscher, the program is designed to train nutritionists to apply the scientific knowledge of nutrition to the promotion of positive health, prevention of ill health, and the dietary control of disease. The program requires coordinated graduate work in the fields of home economics, public health and public welfare, and public health nursing in a community where there is adequate opportunity available for field work under the guidance of professionally trained nutritionists.

"Adequate nutrition is just now being recognized as important," Dr. Hunscher said. "Public health nutrition is a well-defined field that is only about six or seven years old, and the number of trained nutritionists is not large enough to satisfy the demand."

The training includes in-service programs for public health nurses, teachers and other professional personnel, advisory services to schools, sanitoria, and other institutions on group feeding and nutrition, education and preparation of educational material.

Some of the functions of a nutrition service include: control of dietary deficiency diseases; promotion of health through encouragement of wise production or selection and proper processing, preparation and use of foods necessary for optimum nutrition; studies and surveys of prevailing food practices, costs, availability and use of foods; individual and group instruction of adults and children on food and nutrition, and cooperation with welfare agencies in formulating budget standards.

Students enrolled for the current public health nutrition program include the following nutrition consultants for state departments of health: Mrs. Myrtle Ming Letford, Alabama; Maxine Turner, Oklahoma; Mrs. Rachel Ferguson, West Virginia; Esther Frendberg, North Dakota; Anna Smrha, Nebraska; Ortiz Olga Martinez, Puerto Rico; and Anna Banus, Massachusetts.

Improving the Nutritive Quality of Foods

The Council on Foods and Nutrition, A.M.A. wishes to encourage efforts to improve as far as possible the nutritive quality of all foods which contribute importantly to the American diet and which thereby constitute the food environment of the people. A genuine interest is taken by the Council in all attempts to raise the level of nutrients of foods during storage, processing and cooking. Programs of the dairy industry directed toward the production of milk of a higher and more uniform vitamin A content have had the support of the Council. Recently plans have been made to grant acceptance and use of the Council Seal to canned tomato and citrus juices, which contain a high natural content of vitamin C. The Council has also encouraged limiting consumption of sugar to such amounts as are needed to increase the palatability of foods with significant nutritional values.

In spite of all these efforts there exist now and will undoubtedly continue to exist for some time certain specific deficiencies in large segments of the population which can be remedied best through addition of the indicated nutrients to cheap, staple foods that occupy substantial places in the dietary. The Council has favored and encouraged the addition of certain nutrients to selected foods for the purpose of overcoming these deficiencies by replacing as nearly as possible that which has been lost in processing or by making appropriate foods serve as carriers of dietary essentials which otherwise are inadequately supplied by many diets. Such additions considered to be in the interest of the public health are enumerated as follows:

Restoration (referred to as enriched in instances in which federal standards have been enacted): of processed cereals with thiamine, riboflavin, niacin and iron; of corn meal with thiamine, niacin and iron; of hulled rice with thiamine, niacin and iron. Enrichment of white flour with thiamine, riboflavin, niacin and iron; of white bread and rolls with thiamine, riboflavin, niacin and iron; of farina with thiamine, riboflavin, niacin and iron. *Fortification:* of milk with 400 units of vitamin D per quart; of oleomargarine with not less than 9,000 U.S.P. units of vitamin A per pound; of salt with iodine. The Council reaffirms its expression of opinion respecting the conditions under which additions of vitamins or minerals to foods will be approved as stated here and previously. As more knowledge is acquired, some of the present "enrichment" programs may be modified. Some may be discontinued and new ones may be added. It is believed, however, that the present guiding principles will be maintained. In any case the addition of synthetics to natural foods must depend on the prevention of known deficiencies in groups of the population and not on the utilization of synthetic products which happen to be available at low cost. In the future the synthetics may be used more efficiently in animal nutrition to decrease the cost of animal products so that these materials may be more widely used in the human diet.

The Council disapproves of unlimited or indiscriminate fortification of general purpose foods with minerals, vitamins, amino acids or other nutrients. It likewise disapproves of artificial combinations of edibles designed to carry vitamins, minerals amino acids or other nutrients for the use of the general public.—*Statement of the Council on Foods and Nutrition, J.A.M.A., 129: 348, 1945.*

SOYBEANS AND SOYBEAN PRODUCTS IN THE MENU[1]

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THE reluctance of the American people to accept soy flour as a staple food may be due in part to the fact that it was once offered on the market as a "health flour." However, a much more important factor in its limited use has been its distinctive flavor. As a rule even the most ardent promoter of soy products recognizes this limitation and is willing to admit that the palatability problem has not been entirely solved.

Long before the present shortage of protein foods existed, Horvath (1) was promoting the use of soy flour as a national food. According to him, the soybean was cultivated in China in 2838 B.C. Prior to World War I, Central European countries were familiar with soybean products, and the value of soy flour in bread was recognized. More recently experimental work in promoting the growth of rats has shown the superiority of bread in which as much as 15 per cent of the wheat flour had been replaced by soy flour.

USES FOR SOY FLOUR AND GRITS

Soy flour and soy grits available on the market are, for the most part, low-fat, high-protein products. A large percentage of the fat has been extracted and the resulting flour or grits are approximately 50 per cent protein. With this in mind it is easy to see how replacing 15 per cent wheat flour with soy flour materially increases the protein content of a food.

In addition to protein, soybeans supply thiamin, riboflavin, pyridoxine, biotin, niacin and pantothenic acid. According to Burkholder (2), soybeans compare favorably with meat, except for a lower riboflavin and niacin content.

In spite of high nutritive value and low cost, soy products are in little danger of replacing popular protein foods. Texture and flavor are both against this. Many object to the nutlike texture which the soybean retains even after prolonged cooking. Others find this texture especially pleasing. This should cease to be a problem with increased use of pressure saucepans in which, in a relatively short time, soybeans can be cooked tender and soft but not mushy. Adding soy flour and soy grits to a product tends to change the texture; the flour, as the term implies, being powdery, and the grits mealy. The extent of this change depends upon the proportion used as well as upon the nature of the foods with which they are combined. Almost always more liquid is needed, as soy flour and grits take up relatively large quantities of moisture. Although in many instances the soy product does not detract from the flavor of a food, seldom does it add to it. Because of this fact it is well to use soy products in limited amounts in a number of different foods rather than to use large amounts in a few.

For several years prior to World War II the results of experimental work demonstrated that yeast bread containing approximately 3 per cent soy flour was more acceptable to many consumers than an all-wheat bread. This greater acceptability was based upon superior flavor, keeping quality, or toasting quality. Since the war the tendency has been greatly to increase the soy flour content of many products: for example, as much as 50 per cent in quick breads. Most of the recipes, but by no means all, call for less soybean flour, perhaps to the extent of 25 per cent of the wheat flour.

A high proportion of soy flour is readily detected by the average consumer. Odor, flavor, and appearance of the product may be objectionable. Repeated experiments have shown that 10 or 12 per cent of soy flour is acceptable to most people. As a rule, muffins of all types, corn bread and other quick breads, with the possible exception of biscuits, carry this small amount of soy flour without noticeably affecting flavor. Satisfactory waffles and griddle cakes may contain double this proportion of soy flour. Ten per cent soy flour may be safely added to most yeast roll mixtures and few people find this amount objectionable in yeast bread. However, in the latter the critical observer can usually detect the presence of 10 per cent soy flour.

Cookies and gingerbread are two of the most satisfactory products in which to use soy flour. Although it is not to be recommended as a general practice, as much as 50 per cent wheat flour has been replaced by soy flour in certain cookie recipes with excellent results.

In cakes, part of the flour, fat, or eggs may be replaced by soy flour. When this was done in plain cakes containing whole eggs and in caramel devil's food (3), a palatability committee found many of the cakes to be almost as good as the standard which contained no soy flour. In no instance, however, did the judges consider a cake containing soy flour to have better eating quality than the standard. One third to one half of the cakes containing soy flour were softer, as measured by degree of compressibility, after standing 48 hr., than they were after 24 hr. The compressibility of all standard cakes was less at the end of 48 hr. Thus, as with bread, it appears that a small percentage of soy flour in cake retards staling.

TABLE 1

*Results of substituting soy products for part of meat in meat loaf**

	LOAF 1	LOAF 2	LOAF 3
Ground beef	4 lb.	4 lb.	4 lb.
Ground pork	1 lb.	0	0
Bread crumbs	5 oz.	5 oz.	5 oz.
Eggs	6	5	5
Milk	1 qt.	2 qt.	1½ qt.
Soy flour	0	1 lb.	0
Soybeans, cooked, drained, ground	0	0	3 lb. (1½ lb. dry)
Seasonings	as desired	increased	increased
Number of trials	6**	4	2
Loss due to evaporation	9%	11%	6%
Loss due to drip	22%	10%	7%
Total weight cooked loaf	5 lb. 11½ oz.	8 lb. 2 oz.	8 lb. 8½ oz.

* Recipe for meat loaf containing soy flour included in *Soybean and Soy Flour Recipes for Quantity Cookery* (mimeographed), prepared by authors, 1944.

** Two loaves were made of all beef after the question was raised as to what effect omitting the pork might have on the shrinkage. The results were in line with those obtained with the combination of meats.

One of the most widely recommended uses of soy products is as a meat extender. Some workers prefer soy grits but in this laboratory soy flour was preferred for combining with ground meat in patties and loaves. Soybeans, cooked, drained, and ground, have also proved highly satisfactory in these products. Meat loaf and patties of desirable texture are obtained when 20 per cent of the meat is replaced by an equal weight of soy flour (with liquid increased). The loaf holds together well for serving. When soy flour or ground soybeans are used, there is less shrinkage, as little fat cooks out. Not only is the meat replaced by a less expensive product, but a larger proportion is retained as servable meat loaf.

An indication of the difference in shrinkage as well as the increase in yield when soy products are used in meat loaf is shown in Table 1. Uniform-size loaves were baked regard-

[1] Received for publication June 25, 1945.

less of the amount of the mix, so that variation in shrinkage was not due to the size of the loaf.

If the cooked loaf were calculated to 3-oz. servings, it would be quite simple to determine the increased number of servings possible when soy flour or soybeans are used, as well as the difference in cost based on current prices of ingredients included.

SOYBEANS

Soybeans, as such, have a wide variety of uses. Not only may they be used as meat extenders but also as the chief ingredient in an entrée. They may be prepared as baked beans or served with creole sauce or in casseroles, in which case the beans may be mashed, chopped, or left whole. Soybeans may replace other types of beans in recipes for chili, bean loaf, soufflés, or soups. As already mentioned, cooking the beans under pressure results in a soft product, which is more readily sieved than one cooked under normal atmospheric conditions. Choice of method will, of course, depend largely upon the equipment at hand.

The high-fat content of the soybean is distasteful to some, and even though it is not evident as fat there may be an unpleasant aftertaste. This may limit the frequency with which the beans may be served. It may also be a reason why many of the acceptable recipes using soybeans are rather highly seasoned. In the case of "high-protein" flour and grits, this objectionable high-fat content has been eliminated. This feature, together with the ease with which the flour or grits may be added to many different dishes, argues for their frequent and extensive use as sources of protein in the diet.

SUMMARY

In brief, it would seem that:

The use of a limited quantity of soy flour or soy grits in many products, rather than large amounts in a few, is a desirable practice.

From 10 to 12 per cent of the wheat flour may be replaced by soy flour in a large number of products.

A higher proportion of soy flour may be used in many cookies and in griddle cakes and waffles.

Soy flour, soy grits, and soybeans may be used satisfactorily as meat extenders.

Soybeans may be served in a great variety of ways as tasty, nourishing dishes.

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Soy in Bread

Thermophile limitation to not over 50 per gram should be added to the specifications of the Food Distribution Administration, Grain Products Branch, to ensure a soya flour satisfactory for inclusion in yeast-raised goods. Of 5 commercial soy flours tested for rope spores, 3 had counts over 200, one showed 20 and the other only 2 spores per gram. Other factors reported included color, which is affected by even 5% of bleached soy flour in the wheat flour. Bleaching with an agent containing benzoyl peroxide improved the baking properties of the wheat-soy mixtures. There is not much effect on dough absorption up to 5% soy flour.

Small amounts have no adverse effect on a farinogram, but when 20 parts of soy flour is used, dough development time and dough stability range are shortened and the breakdown on long working is increased. With 3% soy flour, no change in the amount of yeast food is necessary. There is no effect on gas production with diastated flour up to that percentage, and only slight increase above that. Oxidizing agents improve dough properties when soy flour is present. The effect of the soy flour on gluten protein is similar to that of glutathione.—*Bohn, R. T., and Favor, H. H.: Functional properties of soya flour as a bread ingredient, Cereal Chemistry, 22:296, 1945, abstracted in Food Industries, September 1945.*

Nutritional Conditions in Holland

Holland was overrun by the Nazis the week of May 10, 1940, and for the following five years a deliberate policy of starving the Dutch was pursued by the conquerors. Throughout the winter of 1944–45 the average caloric intake for adults in many cities of western or "occupied" Holland was estimated at 1200 to 1400 and in March and April of 1945 at 800 to 1000 calories. The protein supply was almost limited to that furnished by potatoes, coarse bread, and a few sugar beets; many people were dying of simple starvation.

With the complete liberation of the country approaching in the spring of 1945 the Allied Command and the Dutch prepared to give quick aid. Fifty special Red Cross Feeding Teams, each consisting of a physician and 15 Red Cross workers, were equipped with adequate motor transport and supplies of skim milk powder, sugar, gruel, and a casein hydrolysate preparation. Before deployment of these teams to the areas of Holland, it seemed necessary to assess rapidly the nutritional status of the population and to ascertain what food supplies were immediately available. Two "spearhead" nutrition teams, one American and one Canadian, both augmented by Dutch personnel and American and English nutrition consultants, moved into Utrecht, May 7, along with the army of liberation and in one week made an initial survey of the principal areas of western Holland. Clinical evidence of real starvation was abundant in all urban areas, the most pronounced findings being weight loss, pallor, cachexia, and edema. Frequent cases of "hunger osteopathy" or "milkman's syndrome" were also observed. Classic vitamin deficiency syndromes were rarely seen although folliculosis, cheilosis, glossitis, and papillary atrophy were frequent. Weakness, fatigue, diarrhea, muscle pains, and paresthesias were common complaints. Average caloric intakes were found to range from 500 to 1000 calories per day. Along with starvation, certain diseases had increased considerably. Tuberculosis morbidity had increased four to five times, and enteritis and a nonspecific toxic dysentery, which before the war were rare in Holland, were now present in 15 to 20 per cent of the population. Peptic ulcer and hernia had greatly increased. Interestingly enough, heart disease, hypertension, and obesity had greatly diminished. Lack of soap and hot water led to miserable conditions accompanied by the common insect infestations.

Two weeks after the survey, emergency "hunger hospitals" were established for children and one thousand beds are now available for this purpose. It is strange, indeed, to be in a ward with a hundred young children and hear scarcely a sound, for they all lie quietly in bed, completely fatigued.

Careful dietary histories taken from housewives in 26 homes of the poor class yielded the following estimates of daily food intakes (figures in grams): bread, 23; thin soup, 211; potatoes, 97; cauliflower, 75; milk, 20; sugar, 75; cheese, 2; peas, 4; and oats, 10. This dietary furnished approximately 630 calories.

These one-day spearhead surveys of western Holland were accomplished in the first week following liberation. The survey teams then began a more thorough study of a few of the principal areas and augmented the studies with total protein and hemoglobin estimations. The arrival from England of a mobile laboratory staffed by members of the Oxford Nutrition group permitted many more laboratory studies to be made. The results of all of the various nutritional studies now being made in Holland, and those that were made by Dutch scientists during the war, will soon be put together in one report which it is hoped will be published in 1946.—*Stare, F. J.: Nutritional conditions in Holland, Nutrition Reviews, 3:225, 1945.*

EFFECT OF QUANTITY PREPARATION PROCEDURES ON VITAMIN RETENTION: CANNED PEAS[1]

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THE purpose of this study was to determine the retention of ascorbic acid, thiamin, riboflavin, and niacin in commercially-canned peas during heating and holding in amounts to serve 100 by various methods, including one commonly used in the Army mess. The peas (No. 4 screening), canned and packed in No. 10 cans in 1942 by The Snider Packing Corporation, Rochester, New York, were stored at room temperature (65 to 70°F.) and the studies made during March and April 1943.

METHODS

To determine the proportional weights of peas and liquid to use in each cooking study, according to the methods described below, the contents of 6 cans were carefully mixed, drained in an aluminum colander 2 min., and the weights of the drained peas and of the liquid obtained. Proportional amounts, 11,770 gm. peas and 5750 gm. liquid, were heated together in the first study.

In the following Methods 2–4, but not in Method 5, the contents of 5 No. 10 cans were mixed and drained; portions of drained peas and liquid were reserved for analyses, and 9300 gm. peas and 4780 gm. liquid were heated together. This amount was approximately the contents of 4 No. 10 cans. In the last study, unopened No. 10 cans were heated. Vitamin retentions in the peas heated by this method were based on average vitamin content of 6 cans of unheated peas and liquid. Each heating method, except the first which yielded an unsatisfactory product, was repeated at least 3 times. After each heating or each holding, the peas were drained in an aluminum colander 2 min. and the weights of peas and of liquid recorded.

Method 1. Peas and liquid placed in steam-jacketed kettle; 25 sec. were required for the liquid to come to a boil, and the peas were boiled 3½ min., the time required to heat the peas in the center of the kettle. Proportional amounts of heated peas and liquid were then held in the steam-jacketed kettle 90 min. with the steam turned to the lowest point (about 90° C.).

Method 2. Canned liquid, in heavy aluminum pot on top of the stove, evaporated to half its volume, which required 90 min.; peas then added and heating continued. The liquid returned to the boiling point within 16 min. after which peas were simmered until thoroughly heated (about 4 min.).

Method 3. Peas and liquid heated to 98° C. in heavy aluminum stockpot on the gas range, a method commonly used in the Army; this required 65 min. Since holding the heated vegetable before serving is also common practice in the Army mess, proportional amounts of the heated peas and liquid (about nine tenths of each cooking lot) were held at the simmering point for 30 min., and for 3 hr.

Method 4. Unopened cans of peas heated in institution-type steamer at 5 lb. pressure for 30½ min. This heating time was necessary to heat the peas in the center of the can. Weighed pieces of cheesecloth were used to collect the liquid which escaped as the cans were opened.

Method 5. Peas and liquid put in aluminum dishpan which was placed in a preheated institution-type steamer. At the end of 1½ min. the steam vent was closed so that the pressure gage read 5 lb. At the end of 15 min. the steam was turned off, and 30 sec. later the peas were removed from the steamer.

Sampling. The unheated canned peas and liquid were analyzed separately before each cooking study, and losses owing to heating were calculated from these results in order to rule out the effect of any differences of vitamin content caused by storage or variation from can to can.

At each sampling stage about 450 gm. peas and 450 gm. liquid were removed to a room with controlled illumination and the peas chopped with a sharp knife. Duplicate samples were taken of the chopped peas and of the liquid for determination of thiamin, riboflavin, and total solids. Some of the chopped peas and some of the liquid were frozen and stored until determinations of niacin could be made in another laboratory within one week. For the ascorbic acid determination, duplicate samples were taken from about 450 gm. peas which had been chopped immediately, and from the liquid. These samples were immediately covered with the chilled extractant and analyzed.

Analysis.

Ascorbic acid was determined by the method of Bessey and King (1) as modified by Mack and Tressler (2) and further modified by the use of the Waring Blendor. Samples (25 gm.) of the chopped peas, or 25 ml. of the liquid, were made to a volume of 100 ml. with 2 per cent metaphosphoric acid in 1N sulfuric acid and the peas and extracting acid ground in a Waring Blendor for 2 min. and centrifuged; 15-ml. aliquots of the vegetable extract and 10-ml. aliquots of the cooking water extract were made to approximately 50 ml. with 8 per cent acetic acid and titrated with 2,6 dichlorophenol-indophenol which was standardized daily against pure ascorbic acid.

Thiamin and riboflavin were determined by the combined method of Conner and Straub (3) as modified for thiamin determinations in vegetables (4). Samples (25 gm.) of the drained peas were ground in 375 ml. N/10 sulfuric acid in the Waring Blendor, heated on the steam bath 30 min., cooled, and 25 ml. 2.5M sodium acetate containing 0.5 gm. Clarase added to each, and the samples incubated at 50°C. for 2 hr. The procedure for the cooking liquid was the same, except for the elimination of grinding and the use of only 100 ml. of the N/10 sulfuric acid and 0.1 gm. Clarase dissolved in 5 ml. of the sodium acetate. The vegetable extracts were made up to 500 ml. and the cooking water samples to 250 ml., with distilled water, filtered, and 50 ml. of these extracts was run through the adsorption apparatus suggested by Conner and Straub (3) and the riboflavin eluate read as these authors have described. The method of Moyer and Tressler was used for the thiamin readings.

Niacin determinations were made by a method essentially that of Snell and Wright (5). The extract was prepared by grinding a 10-gm. sample with 200 ml. water in a Waring Blendor, and autoclaving the resultant suspension at 120°C. for 15 min. The suspension was made to 4 liters with water and filtered with suction. The cooking water samples were autoclaved in water, made to volume, filtered, and each sample was set up at 3 and 5-ml. levels.

Total solids determinations were made by drying approximately 15 gm. peas at 70°C. under 28 to 30-in. vacuum 48 hr.

Palatability. The peas prepared by each method were scored for flavor, texture, and appearance by at least 6 experienced judges. Five points were allowed for each of the three factors.

Statistical Treatment. In order to determine whether the observed differences between the effects of the different heating and holding methods on the vitamin content of peas were real or merely due to experimental variation in the methods of study, a statistical analysis of representative data was made.

Since the percentage retention of vitamins in the vegetable as served was of greatest importance in these studies, it was selected for the statistical treatment. Standard errors were calculated and used in ascertaining by the "t-value" method as outlined by Snedecor (6) the significance at the 5 per cent level of the difference of the observed retention of a vitamin between (a) the heating methods; (b) the holding methods; and (c) both the heating and holding methods.

DISCUSSION OF RESULTS

The net weight of one No. 10 can of peas ranged from 3130 to 3170 gm., or an average of 3151 gm. for each of the 18 cans of which weights were taken. The drained weight

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of each can ranged from 1940 to 2085 gm. or an average of 2067 gm.

The distribution of ascorbic acid, thiamin, riboflavin, and niacin in the unheated peas and liquid, in the same proportion as found in the cans before each cooking study, is presented in Table 1. The averages of these values show the distribution to be: 62 per cent of the ascorbic acid in the solid portion and 38 per cent in the liquid; 65 per cent of the thiamin in the solid portion and 35 per cent in the liquid; 73 per cent of the riboflavin in the solid portion and 27 per cent in the liquid; and 63 per cent of the niacin in the solid portion and 37 per cent in the liquid. This distribution was similar to that observed by Brush, Hinman, and Halliday (7).

TABLE 1

Effect of 5 methods of heating and of 3 methods of holding on the ascorbic acid, thiamin, riboflavin, and niacin content of drained canned peas

METHOD OF PREPARATION	TOTAL SOLIDS	VITAMIN CONTENT*				AVERAGE VITAMIN RETENTION** ± S. E. AND RANGES†								NO. OF REPLICATIONS
		Ascorbic Acid	Thiamin	Riboflavin	Niacin	Ascorbic Acid		Thiamin		Riboflavin		Niacin		
						Drained Peas	Liquid	Drained Peas	Liquid	Drained Peas	Liquid	Drained Peas	Liquid	
	%	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*	*mg./100 gm.*	%	%	%	%	%	%	%	%	
1. Unheated‡	22.5	32.7	.373	.329	3.54	60.4	39.6	65.4	34.6	74.9	25.1	60.9	39.1	1
Heated 3¾ min. in steam-jacketed kettle	22.7	19.3	.423	.362	4.71	33.5	32.6	70.5	32.1	78.7	25.6	77.0	39.3	1
Held 90 min. at 90°C. in steam-jacketed kettle	25.4	16.5	.407	.388	5.17	31.3	21.8	70.9	36.1	90.2	22.0	99.1	37.5	1
2. Unheated	22.0	28.0	.382	.359	4.10	60.7 58–62	39.3 38–42	65.1 63–67	34.8 33–37	74.5 74–75	25.6 25–26	64.2 63–65	38.5 35–37	3
Heated by simmering 4 min. in liquid evaporated to ½ its volume (90 min.)	24.5	14.6	.386	.373	5.29	33.1 ±.752 32–35	17.6 17–18	69.6 ±4.19 65–77	15.6 14–17	76.0 ±1.11 74–78	23.7 21–25	87.1 ±7.93 77–103	27.7 24–33	3
3. Unheated	20.5	34.6	.385	.380	4.26	61.6 61–63	38.3 37–39	65.1 63–67	34.9 33–37	71.1 69–72	28.9 28–31	65.6 64–67	34.4 33–36	4
Heated to 98°C. on gas plate (65 min.)	22.6	20.1	.365	.338	3.41	35.4 ±2.79 30–41	35.7 34–38	62.3 ±2.56 61–66	36.5 32–37	65.6 ±1.06 63–70	31.0 27–34	62.7 ±4.50 54–76	44.2 38–54	4
(a) Held at simmer 30 min	23.9	18.0	.346	.278	4.10	32.3 ±1.43 29–36	28.3 24–30	63.8 ±.734 63–66	34.0 31–35	60.2 ±2.05 56–63	27.6 27–28	63.8 ±9.35 44–83	43.2 35–48	4
(b) Held at simmer 3 hr	25.0	13.7	.387	.387	5.83	27.3 ±2.56 21–33	9.5 4–18	72.1 ±6.19 67–79	9.6 5–14	81.4 ±2.11 76–85	9.8 5–13	88.2 ±2.82 85–92	32.9 25–41	4
4. Unheated§	21.9	31.2	.374	.329	3.88	61.4	38.7	66.2	33.8	71.7	28.2	65.0	35.0	6
Heated 30 min. in unopened #10 can in steamer	23.8	22.6	.299	.273	4.38	45.7 ±1.93 46–50	38.3 35–46	55.9 ±3.40 47–65	33.0 19–40	61.6 ±3.90 46–71	29.1 17–37	44.3 ±6.43 19–63	40.8 21–47	6
5. Unheated	23.0	33.1	.326	.339	3.70	63.4 62–66	36.6 34–38	62.7 62–63	37.2 37–38	71.4 70–73	28.6 27–30	61.5 59–63	38.5 37–41	4
Heated 15 min. in open pan in steamer	24.4	23.5	.311	.322	3.46	44.0 ±0.64 43–46	33.8 32–35	60.5 ±2.82 56–68	38.8 37–41	68.4 ±3.15 61–78	30.7 29–31	59.2 ±0.99 56–61	39.4 33–47	4

* Vitamin content of the drained peas reported on the dry basis.

** Percentage retention was calculated on the moist basis using weights of the unheated drained peas, of the unheated liquid, of the heated peas and of the heated liquid.

† Significant differences in retention were found between:

Ascorbic Acid	*Thiamin*	*Riboflavin*	*Niacin*
3a and 4, 5	None	2 and 3a	2 and 3
3b and 4, 5		4 and 3b	4 and 5
		3a and 3b	3, 4, 5 and 3b

‡ Because this method did not yield an acceptable product it was not repeated.

§ Composite sample from 6 No. 10 cans.

The vitamin content of the peas after heating and the percentage of total solids are also given in Table 1. Drained canned peas contained an average of 31.9 mg. ascorbic acid; .368 mg. thiamin; .347 mg. riboflavin; and 3.90 mg. niacin per 100 gm. on the dry basis. On the moist basis, the canned peas contained 6.16 to 7.61 mg. (average

7.01 mg.) ascorbic acid; .0715 to .0840 mg. (average .0800 mg.) thiamin; .0720 to .0790 mg. (average .0754 mg.) riboflavin; and .796 to .902 mg. (average .843 mg.) niacin per 100 gm. The liquid contained 7.6 to 9.3 mg. (average 8.45 mg.) ascorbic acid; .0777 to .0971 mg. (average .0855 mg.) thiamin; .0480 to .0718 mg. (average .0585 mg.) riboflavin; and .825 to 1.05 mg. (average .947 mg.) niacin per 100 gm.

The effect of the heating and holding methods on the percentage retention of ascorbic acid, thiamin, riboflavin, and niacin in the drained canned peas and in the liquid, as well as the statistical summary of the percentage vitamin retentions in the heated peas, is shown in Table 1.

The peas heated by Method 4 retained the greatest total amount of ascorbic acid. This method of heating, however, may not be practical because of the danger of the cans bursting under excess pressure and the difficulty of opening the hot can. The peas heated in the open pan in the steamer retained an amount of ascorbic acid that was not significantly lower; the three other methods of heating to serving temperatures resulted in no significant differences in retention of ascorbic acid in the drained peas. In Method 2, however, the liquid which had been evaporated to half its volume before the peas were added, retained about half as much ascorbic acid as did the liquids which had been heated by the other methods. The 90-min. period required for the evaporation of the liquid was probably responsible for this greater loss. [Because of the limitations on space at the time this manuscript went to press, much of the discussion has been omitted here. Ed.]

The total destruction of ascorbic acid ranged from 16 per cent (Method 4) to 49 per cent (Method 2).

TABLE 2

Vitamin content and palatability scores of 100-gm. servings of canned peas after various methods of heating and holding

METHOD	VITAMIN CONTENT				PALATABILITY SCORE*
	Ascorbic Acid	Thiamin	Riboflavin	Niacin	
	mg.	*mg.*	*mg.*	*mg.*	
Heated 3¾ min. in steam-jacketed kettle	4.38	.0960	.0822	1.07	8.3
Held 90 min. at 90°C.	4.19	.103	.0986	1.31	—
Simmered 4 min. in liquid evaporated (90 min.) to half its volume	3.58	.0946	.0914	1.30	10.3
Heated to 98°C. on gas plate (65 min.)	4.54	.0825	.0764	.771	10.4
Simmered 30 min.	4.30	.0827	.0664	.980	9.5
Simmered 3 hr.	3.42	.0968	.0968	1.46	7.1
Heated 30 min. in unopened #10 can in steamer	5.38	.0712	.0650	1.04	11.8
Heated 15 min. in open pan in steamer	5.73	.0759	.0786	.844	12.4

* The highest possible score was 15, 5 each for appearance, texture, flavor.

During the 3-hr. holding period apparently some riboflavin and niacin were absorbed by the peas from the liquid. Probably no actual destruction of these vitamins occurred.

The vitamin content of servings of canned peas after the various heating and holding methods, and their palatability scores appear in Table 2.

Heating the peas in unopened cans in the steamer resulted in the most palatable product; those heated in the steamer in an open pan were scored almost as high; those simmered for 3 hours were markedly inferior in color, flavor and texture; those cooked in the steam-jacketed kettle were broken and mushy.

SUMMARY

The ascorbic acid, thiamin, riboflavin, and niacin content of peas commercially canned in No. 10 cans and the percentage loss of each of these vitamins as the result of 5 methods of quantity heating and 3 methods of holding are reported.

Approximately one third of the total amount of each vitamin was retained in the liquid portion of the unheated, canned peas, except riboflavin, of which about one quarter was in the liquid. During heating, the ascorbic acid tended to be equally distributed in the solid and liquid portions. The distribution of the B group of vitamins remained about the same, except in the method in which the liquid was evaporated to one half the original volume before adding the peas. Probably the canned peas had been stored long enough so that an equilibrium was reached in the concentrations.

Ascorbic acid was the only vitamin destroyed by heating the peas; however, almost half was retained in the drained peas heated in the steamer, and about one third in the peas heated by the other methods.

Approximately two thirds of the thiamin and riboflavin was retained in peas during heating by each of the methods, and almost as much of the niacin. No appreciable destruction of any of these vitamins occurred.

During holding of the heated peas in the original liquid for 30 min. some loss of ascorbic acid was observed in the liquid but none in the peas. Holding for 3 hr. resulted in a marked loss of ascorbic acid in both solid and liquid portions, also in palatability. No destruction or solution of any of the B group of vitamins occurred during holding.

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(6) Snedecor, G. W.: Statistical Methods. Ames, Iowa: Collegiate Press, Inc., 1938.
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Goat's Milk. It has been estimated that there are over 1,000,000 milk goats in the United States and that the retail value of the goat's milk produced here exceeds $100,000,000 annually. Although goat's milk is not widely used for infant feeding in this country it is advocated for use in some artificially fed infants who are sensitive to cow's milk. From Europe, where this product has been more generally used in infant feeding, there have appeared a number of reports of "goat's milk anemia" which is seen in children fed exclusively on this food. It appears, in summary, that the composition of properly produced goat's milk is similar to that of cow's (Holstein) milk, and that experimentally produced "goat's milk anemia" is (as found also from feeding tests with unsupplemented cow's milk) due to a lack of iron and copper. In special cases, however, when the animal's food supply has been extremely limited, anemia may result from poor quality with respect to other nutrients than copper and iron.—*The Nutritive Quality of Goat's Milk, Nutrition Reviews, 3: 203, 1945.*

Editorial

THE FIRST MARJORIE HULSIZER COPHER MEMORIAL AWARD

One of the most inspiring occasions in the annals of the American Dietetic Association was the presentation of the Marjorie Hulsizer Copher Memorial Award to one who had been selected by the Executive Board for the honor. Modest and unassuming, as was the woman whose name and work are thus commemorated, the recipient of this award, Lieutenant Motley, typifies the grace and distinction, and the quiet courage with which women have served the sick and wounded under conditions of great danger and indescribable hardship in time of war.

"I am conscious of enjoying a special privilege in the announcement I am about to make. An anonymous gift of $5,000 has been presented to the trustees of Barnes Hospital, St. Louis, with the stipulation that the income from this sum shall be used to perpetuate the name of Marjorie Hulsizer Copher in the special field in which she served so brilliantly. This is to be a memorial award to be given annually at the meeting of the American Dietetic Association for the outstanding accomplishment in the preceding year in any branch referable to dietetics. In making this award, it is the intent of the Trustees of Barnes Hospital 'to stimulate study and accomplishment in the field of Dietetics' and provide a fitting memorial

LIEUTENANT MOTLEY RECEIVING THE AWARD

(Reading left to right: the President-Elect, Mrs. West; Lieutenant Motley; the President, Miss Moore; and the representative of Barnes Hospital, Miss Becker)

In presenting the award at a dinner meeting of the House of Delegates,[1] Maniza Moore, President of the Association, spoke in part as follows:

"For each of us who have attended annual meetings of the American Dietetic Association over a period of years there is always one meeting which stands out in our memory above all others. For me, the St. Louis meeting in 1927 remains the most interesting and enjoyable of all. It was my first convention and the tenth anniversary of the Association. One of the members of the local group chiefly responsible for this meeting was Marjorie Hulsizer Copher. Her efficiency contributed much to the smooth functioning of the program and her charm and sincerity made each of us her personal guest.

[1] Further information concerning the meeting of the House of Delegates appeared under the News Notes in this JOURNAL for November.

to one of the pioneers in the profession 'whose memory we cherish.'

"Mrs. Copher was distinguished for her services during World War I and for her professional activities in the American Dietetic Association. In May 1917 she went overseas as a dietitian with the Peter Bent Brigham Base Hospital Unit of Boston. For her services she was decorated by King George V of England and by the French Government. Later she was transferred to the A. E. F. as Dietitian of Base Hospital No. 57 in Paris. Mrs. Copher was one of the first to introduce the comparatively new profession of dietetics into the British Army. She was called the 'Home Sister' in contrast to the British Army nurse's title of 'Nursing Sister.' Mrs. Copher became a member of the American Dietetic Association in 1921 and served long and actively in the Association as contributing editor of the Current Literature section

of the JOURNAL, and later as a member of the Journal Board.

"She was Chief Dietitian at Barnes Hospital from 1921 to 1925 when she resigned to marry Dr. Glover H. Copher, Associate Professor of Surgery at Washington University. A daughter, Marjorie Ann, was born in 1929. Mrs. Copher died at Barnes Hospital, May 19, 1935, cutting short a distinguished career.

"We regret that, because of unavoidable commitments, it is impossible for Dr. Copher and Dr. Bradley, Director of Barnes Hospital, to be present on this occasion, but we are happy to welcome Miss Henrietta Becker, Dietitian at Barnes Hospital, as their representative. In view of Mrs. Copher's service as a dietitian in World War I, and her decorations by the British and French Governments, it seems particularly appropriate that the recipient of the First Marjorie Hulsizer Copher Memorial Award should be an Army dietitian who has served with distinction in World War II.

"First Lieutenant Ruby F. Motley, Medical Department Dietitian in the Army of the United States, entered the service in July 1935. Early in 1940 she began her duties as a hospital dietitian in the Medical Department in Manila, and later served at Bataan and at Corregidor with the Fort Mills Station Hospital until the surrender. She was recommended[1] for the Bronze Star Medal by the Commanding General, United States Army Forces in the Far East, for meritorious achievement while in the hands of the enemy in caring for the sick and wounded. Lieutenant Motley also received the Presidential Unit Citation Ribbon. She was one of that group of courageous women, the 'Angels of Bataan.' Her home is in Columbia, Missouri, and at present she is on duty at McCloskey General Hospital, Texas.

"Lieutenant Motley, it is my privilege to present to you the First Marjorie Hulsizer Copher Memorial Award in recognition and appreciation of your exceptional achievements while serving as a hospital dietitian with the Medical Department of the Army of the United States during World War II."

A LETTER FROM THE SURGEON GENERAL

The need for more dietitians in Army hospitals was foreshadowed by the events of 1940. Reviews of the work of the Army dietitian in World War I and that of dietitians in government service in the intervening years accordingly began to appear in this JOURNAL, followed by editorials accenting the need for preparedness and participation of the dietitian in the National Nutrition Program, as well as short articles by dietitians in Army service.

Subsequently, when this country entered the war, releases received from the Office of the Surgeon General concerning the Army dietitian routinely appeared in the JOURNAL, and editorials[2] urging that dietitians volunteer for service in the Army. A "Nutrition and the War" section was also instituted, and in December 1942 (p. 830) the first announcement appeared concerning a bill which would provide military status for dietitians. Editorially it was announced in January 1943 that "after twenty-five years" military status for Army dietitians was at last a reality.

Beginning in June 1943 lists of dietitians appointed to the Medical Department, A.U.S., were included in each issue and later, lists of promotions in rank. Thus, the JOURNAL served to mark the progress of the Army dietitian in World War II, from the time when 565 civilian dietitians were on duty in Army hospitals at the close of 1942, to 1945 when more than three times that number had been commissioned in the Army of the United States and the ceiling requirement had reached nearly four times the original number on duty at the close of 1942.

This brief review will serve to introduce the following letter to the JOURNAL Editor dated October 25, 1945, from Major General Norman T. Kirk, the Surgeon General of the United States Army:

"As World War II becomes history and we look back upon the accomplishments of the Army Medical Department, I cannot help but feel a debt of gratitude to the civilian professional groups which gave such whole-hearted support to our efforts.

"The rapid expansion of the Medical Department from its peace time to war strength could not have been accomplished had it not been for this support.

"As one of those who assisted us greatly in the recruitment of dietitians, I wish to express to you the sincere appreciation of the Army Medical Department for your patriotic effort. You have made a valuable contribution to the care of the sick and wounded soldiers in our Army hospitals."

Current Comment

A NATIONAL FOOD AND NUTRITION PROGRAM

The National Planning Association, whose objective is "by foresight and the coordinated use of existing knowledge, to study and recommend for consideration plans for coping with the future," published in May 1945 a pamphlet, *A Food and Nutrition Program for the Nation*.[1] The subcommittee that prepared the brochure consisted of members of the agriculture, business, and labor committees of the organization, including college professors, businessmen, and officials in the C. I. O., A. F. of L., etc. It is stated in the Introduction that the program presented combines the thinking of a much larger number of persons, from the fields of education, nutrition, medicine, public health, government, economics, and the other social sciences, the names of whom are not mentioned. The program is extremely broad, including discussion of measures to be taken to raise the level of the diets of all the people in the country, the nutritional level to be sought, the part to be played by consumers, producers, food industries and trades, cooperatives, and even international measures. The following excerpts concern only the plans laid out for professional nutritionists in a public or government program of education and service:

"The program of school education in foods and nutrition should include the following: 1. Continue and improve present programs and extend them to include practically all pupils. Combine nutrition with health education. No child should leave a public school without having been taught the elementary facts of health and nutrition. High school and college students should have more advanced instruction in these subjects. 2. Use instruction in vegetable and fruit growing as a method of teaching elementary science. 3. Use school lunches as a form of learning good nutrition by practicing it. 4. Pay more attention in agricultural instruction to production planning and adjustment and to individual farm and home budgets.

[1] Presented by the Commanding General, O'Reilly General Hospital, August 25, 1945.

[2] J. Am. Dietet. A. 18: 584 and 671, 1942.

[1] Planning Pamphlet No. 46, 25 cents, obtainable from National Planning Association, 800—21st St., N.W., Washington 6, D. C.

"Public services to consumers would include: 1. Systematic clinical examination of children in the public schools for nutritional and health deficiencies. Cases discovered should be referred to local physicians, dentists, and others. Clinics offering similar service to adults should be organized on the same basis as hospital services. This activity could be organized best by or in conjunction with state and local public health departments. Nutritional aid and guidance should come to be recognized as a regular function of public health officers. This means that public health departments need to employ specialists in nutrition. 2. Systematic surveys of population groups to discover the extent and nature of prevailing types of nutrition deficiencies, and to develop the most effective methods of combatting them. This should be a joint effort of the public health and the educational and research agencies in the states and counties, under the guidance of such an agency as the National Research Council. 3. In-plant feeding. The public agencies now furnishing guidance will no doubt need to continue to do so. 4. Various forms of supplementary food distribution.

"Priority of use of the different types of supplementary food distribution should be as follows: 1. School lunches. They should be more general, and improved in quality, and related more closely to education in nutrition. 2. Penny-milk and other milk distribution schemes. Improved and expanded and related to education. 3. Special distribution of milk, orange juice, and the like among preschool children of families unable to buy them, and to pregnant and nursing women. Distribution should be upon recommendation of medical or public health authorities and home demonstration agents. 4. Food stamps for families unable to buy needed foods, upon recommendation of public health authorities, home demonstration agents, and public welfare agencies. The foods covered by stamps should in general be prescribed for each family on the basis of needs, and the free distribution should apply only to purchases in addition to those already being made. 5. Distribution of unpreventable emergency surpluses through these channels; but such distribution should be kept within bounds. School lunches should not be made up primarily of foods that happen to be in surplus; nor should the foods distributed through the stamp program be so determined. 6. As a last resort, direct distribution of unpreventable emergency surpluses through depots.

"What sort of administrative setup is needed for carrying out the public or governmental parts of this program? This is a difficult problem calling for careful study and analysis. It is here proposed that the President appoint a special committee consisting both of public officials and laymen which shall review this problem in the next several months and make recommendations. A particular reason for undertaking this now is that this country needs to have a body which will serve as the United States unit in the international Food and Agriculture Organization no doubt soon to get under way. It is obvious at the outset that no one existing agency of the states or the federal government covers all the subjects pertinent to a well-rounded food and nutrition program. On the federal level, most of the divisions of the Department of Agriculture and of the War Food Administration are involved; also of the Federal Security Agency, including the Office of Education and the United States Public Health Service; and the Children's Bureau in the Department of Labor, the Federal Trade Commission, the Department of Commerce, and others. Parallel agencies are involved on the state levels.

"One possible approach is to set up a department of food like the ministries of food of the United Kingdom and many other countries. But such a department could not very well include public health, education, and control of trade practices, so that there would still be great need for collaboration. Another is to create departments of 'general welfare' in the federal and state governments, and transfer nutrition, health, education, social security, and other such activities to it. This would not call for any large reshuffling of present alignments. Another is to retain most of the existing agencies as they are, but require them to integrate their activities relating to food and nutrition. A plan and procedure for this could be worked out, and a special agency that might be called the National Food and Nutrition Board set up to bring about this integration. The membership on such a board probably should include the heads of the important divisions of government involved, representatives of farm, labor, business, consumer, and medical organizations, and a group of representatives of the public with national reputations for their work in the natural and social sciences relating to foods and nutrition. This board would provide a place where the activities of the different agencies would be reviewed and fitted together. It would make recommendations of action to the President where this was necessary to obtain needed coordination. Similar boards would be needed at the state level. The Nutrition Programs Branch could be absorbed into this Board on both federal and state levels. The size of such a board would require it to appoint an executive committee the members of which would give a large part of their time to it.

"Aside from their function in education, the professional dietitians and the home economists working on health and nutrition have important services to perform in the food industry and in hospitals, schools, restaurants, and other institutions and agencies feeding large numbers of people. Their professional organizations—the American Home Economics Association and the American Dietetic Association—have been of outstanding value to the public in promoting better food practices and more adequate appreciation of the importance of good nutrition in relation to health. The nutritionists in the American Public Health Association are carrying out a similar program."

SIR JOHN BOYD ORR HEADS FOOD AND AGRICULTURE ORGANIZATION

The New York *Times* reported on October 27 that Sir John Boyd Orr, world-famed nutritionist and member of the British Parliament, had been elected by the unanimous vote of the delegations present at the Quebec conference as Director General of the United Nations Food and Agriculture Organization, "the first international administrator to be named within the over-all United Nations Organization and leader of the thirty-seven-nation effort to end hunger and starvation throughout the world." Howard R. Tolley, deputy United States member of the FAO, nominated Sir John as a "distinguished scientist, eminent scholar, experienced legislator and successful farmer."

Sir John, in a brief speech of acceptance, called upon the FAO to "lay the foundation of the new and better world which must be the outcome of the recent war. . . . The task set before this new organization, is to get nations to work together to bring freedom from want of food to all mankind. When this is achieved, hunger and malnutrition will be banished forever from the world."

According to the *Times*, Sir John was knighted in 1935 for his public service in scientific nutrition and agricultural research. Until his election to Parliament this year, he directed the Rowett Institute for research in animal nutrition, in Aberdeen, Scotland, which he had founded in 1913. It will be recalled that in 1925 he conducted a test with school children which demonstrated that an additional pint of milk to persons supposedly in normal condition was responsible for marked improvement in health and physique and for an increase of about 20 per cent in rate of growth. In 1930 he established *Nutrition Abstracts and Reviews*, of which he has been Editor in Chief since that date. In 1935 he published the book, *Food, Health and Income*. He was a member of the British Nutrition Committee set up on the recommendation of the League of Nations and also of several agricultural commissions for the reorganization of agriculture in Britain.

MANUAL FOR THE STUDY OF FOOD HABITS

An important contribution of the Committee on Food Habits, National Research Council, is the *Manual for the Study of Food Habits*, published as Bulletin 111. Dr. Margaret Mead, Executive Secretary, was responsible for Sections I through IV, covering Introduction, Approach of the Manual, Context for the Collection of Data, and Some Techniques Which Have Been Used in Observational Studies of Food Habits. Dr. Patricia Woodward, Associate Executive Secretary, prepared Sections V and VI, Experimental Methods in the Field of Food Habits, and How to Find References in the Field of Food Habits.

The manual contains such a wealth of information—all skilfully collected and digested, well organized, and carefully annotated—that it can in reality be considered a textbook, to be read from beginning to end by anyone interested in the problem of "changing food habits" (*see* below). At the same time, it has been well named a "manual" in that it is a handbook or guidebook to be kept at one's side during the pursuit of any project in this field of applied science. In order that each study, no matter how limited, may contribute something to the total picture of food habits in this country and in the world, very definite suggestions for the collection of data are given. As Dr. Mead states, the pattern can be added to as new classes of data emerge with the development of new hypotheses, and by this process of addition to a consistent core one study can be related to another and no study is wasted. The importance of a coordinated plan of assembling material is explained by Dr. Mead as follows:

"To draw the conclusions which are needed today, to shape an educational program, to estimate the impact of some food shortage, some new food, some change in processing or distribution, to adapt a new medical discovery in the field of allergies, to expand the insights of mental hygiene into the feeding of the young child, or to estimate the importance of food and drink in a program of institutional care—for these and numberless other decisions which are now taken partly in the dark, we need data. We need data on the food habits of the American people, by class and age and sex, by region, by foreign nationality background, by degree of urban or rural residence, by occupation, by religion, by disease groups, by date of birth, by amount of education, etc. There are several ways of getting such data. A giant survey could be conducted, costing many hundreds of thousands of dollars, the results of which, while systematic, would be out of date in a few years unless they were again built upon by later surveys. Or we can set up a pattern of research which includes as a matter of course the collection of these data, to the end that as our research grows, as our problems widen and our ability to solve them increases, so will the data which we need increase."

The study of food habits is defined as "the study of the way in which individuals or groups of individuals, in response to social and cultural pressures, select, consume, and utilize portions of the available food supply." It is further stated that "the lack of reconciliation between the approaches to nutrition which emphasize altering the food and those which emphasize altering the habits of individual consumers has been in part due to the absence of a consistent body of data in regard to food habits."

Dr. Mead points out that historically there has been a great distinction between students of primitive and vanishing societies and students who worked within our own society. It has been assumed that the former group of students would be the only observers of a particular people at a particular period in their history, and therefore the student primarily interested in social organization was expected to come back with a usable description of houses and canoes; the student of technology, with a formal description of religious ritual, etc. But psychologists and sociologists making studies in our own familiar civilization have been held to no such responsibility. "So we have masses of studies which have utilized current cultural data without recording it, without recognizing an obligation to observe it systematically. This is a loss in two senses. The systematic observation of the factual data involved, for example, in a study of resistance to change, or amenability to suggestion, brings into focus the cultural setting within which the experiments are being made. A great number of facets of the problem and a great many new relationships emerge which would otherwise be missed. Secondly, we have no systematic mass of observation on such subjects as educational practices, food habits, health observances of different periods, regions, and classes, against which we can make systematic comparative observations in both time and space. When we come to any crisis in applying our scientific knowledge we have no mass of data upon which to fall back. Therefore it seems to be a definite responsibility of workers in fields like food habits, while they are exploring new problems and new methods, to build up a systematic mass of material which has been collected with impartiality and a fair degree of uniformity."

The first point made under the heading, Suggestions for the Collection of Data, is that scientific inquiry advances as the correct questions are asked: "The application of science to research in food habits was in a blind alley position as long as the question which it was asked to answer was: How can we change food habits? for this question was a static one, assuming that a given population has a fixed set of food habits, some of which are incorrect by our standards, and so we wish to change them to an equally fixed set of habits which will conform to the science of nutrition. . . . Instead, we must ask first: What is the nature of nutritional behavior? . . . . We can then alter the applied science question and ask: How can we develop food habits which have the requisite stability and flexibility appropriate for given individuals in a given society at a given time? . . . . any assumption which makes individuals, rather than a part of the social process, the object of social change tends toward the type of authoritarianism in education and political practice which is incompatible with democracy . . . . How can we develop food habits which are both stable enough and flexible enough so that our people will be able to adjust positively and maintain adjustments to whatever food conditions exist? is a question which is consistent with the application of science in a democratic society."

Beneath each main heading in the section on Context for the Collection of Data, which presents an outline of the content of a study of food habits and includes suggestions for placing a problem within the cultural context, there is a series of annotations designed to create an awareness in the student of the type of observation he will want to make, to focus his attention on observations relevant to food habits, and to widen his estimate of what is relevant. All of this is, of course, from the sociological and psychological points of view. The final statement in this section, under the heading "The Development of Flexible Methods" is probably pertinent to all fields of scientific investigation: "The student who repeats on Y population an experiment formerly done by Mr. Z with the Q questionnaire on X population can often claim nothing except industriousness."

In Section IV specific applications of various methods which have been used in observational studies of food habits are discussed for the benefit of students planning a piece of research.

Section V, on experimental methods, describes several problems that have been studied experimentally, many of them on animals. Dr. Woodward makes application of these studies to related studies of the habits of human beings, and those seeking new fields of investigation will find in this section many suggested points of departure well worth their attention. The techniques which have been used to change food choices of human beings and the possibilities which these techniques hold for further investigation should be of especial interest to nutritionists. There are, for example, such "experimental designs" for cafeteria studies, and for studies in which school children are subjects. There is undoubtedly a need for thinking along the lines suggested by Dr. Woodward concerning the conducting and summarizing of studies of this nature. In fact, her critical evaluation may serve as a clue to the reasons why studies of this kind, launched with apparent purposefulness, are sometimes finally so disappointingly vague and lacking in conclusiveness. Those who plan similar studies in the field will have the advantage of being able to use this manual to check the plan, methods and approach before starting out to collect data.

One of the most valuable features of the manual is the alphabetical bibliography, with 682 references, and a regrouping of many of these according to regions. Those for the United States are subdivided into studies of ethnic groups, theoretical articles, psychosomatic studies, and studies of children. A final grouping under methods is subdivided into observational and experimental methods.

One could wish that those who wrote this manual had gone one step further and attempted to set up standards for preparing the data for publication, *i.e.*, the most useful tabular arrangements, method of expressing quantity and quality, the least confusing nomenclature, etc. The fact that any study of food habits means an overlapping of the fields of social psychology and nutrition makes this doubly important, for terms familiar to one group of workers will be foreign to another, or at least difficult to understand. When papers on experimental work and investigations are prepared for publication it is not unusual for a project that was well planned and carefully executed to become bogged down in a mass of confusion and seeming inaccuracies. Only after the editor has cleared with the authors on several points which they had well in mind but failed to set down on paper, is the true value of the work apparent. Evidently there are as many different ways of presenting the same kind of information in tabular form as there are stars in the sky. If there is to be an "over-all" plan for collecting data on food habits, or on other subjects such as food research, it would seem almost self-evident that some standards for presenting these data should be established—granted, of course, that no two studies are exactly alike and that the method of presentation must be flexible. Apparently no concerted attempt at such uniformity has as yet been made. There should be some accepted standard or authoritative body to which a prospective author could turn before submitting his work for publication. No general treatise on the preparation of scientific papers is sufficiently specific and all-inclusive. With regard to studies of food habits, the need seems especially great. The inexperienced student, confronted with a large number of topics "which deserve consideration in any study of food habits" might very conceivably present such a mass of detailed information in a form not adapted to the context or purpose of the study that the value of his investigative work, no matter how accurately executed, would be considerably diminished.

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School of Nutrition, Australian Institute of Anatomy. Nutritional history was made in Australia recently when the Commonwealth Government decided to establish a course in Nutrition at the Institute of Anatomy, Canberra. During a visit abroad last year, the Director paid particular attention to those developments and activities in England and America which were most likely to be of benefit in Australia if introduced here. The outstanding feature was the School of Nutrition at the Harvard Medical School. This course is designed for postgraduate study and extends over twelve months.

After returning to Australia, Dr. Clements suggested that a course of instruction in nutrition should be established in Australia. The Commonwealth Government decided that for the present the course should be conducted at the Australian Institute of Anatomy, Canberra. Presumably, if a Department of Home Economics were established at an Australian university consideration would be given to the transfer of the course to that department.

The purpose of the school is to train teachers from technical schools, teachers' colleges and universities in nutritional science and provide for persons who could undertake nutrition work in the various fields of public health.

Persons eligible for enrolment will include the following: medical graduates; university graduates in science who have completed a course in biochemistry or chemistry; hospital dietitians; persons having qualifications considered to be equivalent to any of the above. When the details of the instruction to be given were planned it was intended that those attending the course would have had appreciable training in the basic sciences of chemistry and physiology. In this regard the course will be at the postgraduate level. The Commonwealth Government has decided to make available six scholarships for persons eligible to undertake the course of instruction.—*Reprinted in the Newsletter of the Victoria Dietetic Association, Australia, June 1945, from Food and Nutrition Notes and Reviews, April 1945.*

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Home Demonstration in Venezuela. Home demonstrators of Venezuela are playing an active and important role in the efforts of the government to improve rural welfare, thus strengthening the national economy of the country, according to the Office of Inter-American Affairs, Washington. A native Puerto Rican, Mrs. Josefa R. Bursian, a specialist in home economics, is director of the home economics program in the Escuela del Hogar Compesino of the Venezuelan Ministry of Agriculture and Livestock, and is in charge of the rural extension services of the Inter-American Cooperative Program for the Production of Food. Since 1944, she has done much to develop the work which home demonstrators are now carrying out.

Mrs. Bursian is in charge of the training of home demonstrators in the Escuela del Hogar Compesino who are sent throughout the Venezuelan countryside for rural educational work in farm homes. They are particularly active in demonstrating to rural housewives without means for home improvements the steps which can be taken inexpensively—improvement in sanitary surroundings, cleanliness within the homes, personal hygiene, decorative touches, and the utilization of practical materials for home needs.

Education in sanitation and nutrition are considered the most important objectives of the Venezuelan home demonstrator's work. What the demonstrators are doing for rural life is considered of immeasurable value by the government for national welfare, for it constitutes a constant impulse toward raising the standard of living, through directing the people toward better nutrition and health.

Promotions, Army Medical Department Dietitians

The following Medical Department Dietitians were promoted during the month of October 1945. They are on duty in Army hospitals in this country and overseas.

First Lieutenants to Captains

Hansen, Jeanette E., R-331
Aldrich, Myrtle, R-624

Second Lieutenants to First Lieutenants

Burke, Mary M., R-2183
Cropper, Ernestine C., R-2173
Green, Catherine, R-2091
Hereford, Jane G., R-1379
Marsh, Elizabeth C., R-1255
Pottschmidt, Helen F., R-1339
Chappatte, Betty T. W., R-870
Miller, Elma M., R-1288
Morris, Zelma C., R-1093
Wood, Mary C., R-88
Fizdale, Jane H., R-1223
Durst, Marion E., R-1175
Moratz, Eunice G., R-1297
Katz, Freda Z., R-1249
Agneberg, Olivia R., R-1327
Moen, Margaret L., R-1412
Martin, Mary M., R-2094
Rousseau, Marylou, R-1261
Helgaas, Dorothy A., R-987
Haight, Alice E., R-1295
Lawrenson, Rosalie M., R-1238
Montgomery, Mary K., R-2045
Lahr, Bernita J., R-1280
Dale, Mary, R-1192
Beran, Alvina R., R-317
Hutchison, Jeanne M., R-2181
Perteit, Loraine W., R-2066
Rudisill, Helen P., R-796
Whelan, Mary F., R-1159
Hacker, Roslyn, R-829
McCurley, Lucy Ellen M., R-1031
Rutherford, Marie O., R-1305
Spearman, Mern M., R-1272

Army Medical Department Dietitians Separated From the Service[1]

The following dietitians have been separated under the provisions of the Separation Policy established by the Surgeon General for Medical Department Dietitians.

Captains

Berger, Bertha S., R-66, Washington, Ill.
Black, Lucile R., R-301, 310 Edgewood St., Hot Springs, Ark.
Harwood, Velma M., R-427, Metamora, Ill.

First Lieutenants

Anderson, Margery L., R-1070, La Conner, Wash.
Anderson, Mary A., R-926, Route 1, Guilford Col., Guilford, N. C.
Arbegast, Ann W., R-984, 1091 Burns Ave., St. Paul, Minn.
Backemeyer, Lucille I., R-30, Murdock, Nebr.
Barnes, Mary C., R-628, 716 Jefferson St., Stillwater, Okla.
Beilfuss, Bonnie F., R-179, 218 S. Oak St., Neillsville, Wis.
Beran, Alvina R., R-317, 2110 Broadway, Lubbock, Texas.
Bowman, Pauline F., R-1366, 213 S. Jackson St., Moscow, Idaho.
Brakel, Mary O., R-365, 4734 Thackeray Pl., Seattle, Wash.
Brightman, Sally E., R-546, 380 Edgewood St., Hartford, Conn.
Brosius, Julia L., R-802, 2349 Leslie Ave., Detroit.
Casey, Alice L., R-618, 109 Gordon Ave., Carbondale, Pa.
Childers, Fae P., R-554, 721 P Street, Sacramento, Calif.
Christiansen, Astrid K., R-24, Slayton, Minn.
Clapp, Elizabeth M., R-722, 8 Harvard St., Springfield, Mass.
Croker, Frances M., R-390, 1088 Fir St., Salem, Ore.
Crowley, Regis O., R-533, P.O. Box 137, Clarenden, Pa.
Cruse, Inis L., R-674, 128 E. Flora, Flora, Ill.
Dickinson, Henriette H., R-328, 728 Calhoun St., Woodstock, Ill.
Field, Violet I., R-399, 411 N. Cedar St., Galesburg, Ill.
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[1] *Editor's Note:* As stated elsewhere in this JOURNAL in the Address of the President of the American Dietetic Association, "The Placement Bureau is ready and eager to assist in the transition from Army to civilian uniform and to bring together the dietitians and the employers who have been awaiting their return to rebuild depleted staffs."

Book Reviews

Principles of Cookery. By Arnold Shircliffe. Published by the Naval Air Technical Training Center, Navy Pier, Chicago. Paper. Pp. 209.

Written from the point of view of a noted authority on food and food preparation who for many years has been a member of the American Dietetic Association, this work was prepared for use at the Naval Air Technical Training Center, Navy Pier, Chicago. It contains a wealth of information which would make it a most practical addition to the dietitian's library if it were generally available. The author, an artist in his field, bluntly states there are but two kinds of cooking, the good and the bad, and "the most artistic and the most wholesome ways of preparing food are the simplest."

Ladies who devise dishes for the feminine public might well keep this in mind when tempted to present for publication in magazines and on woman's pages the tortured salad and the overly ornate and heavy dessert. Let the deadly dull chef or cook also take notice, *i.e.*, the "monkey cook" who uses burnt sugar *ad nauseam* to color every soup and sauce, and the "white-wash cook" who keeps constantly at hand a bucket of flour and water to thicken everything from soup to sauces.

The opening chapters are concerned with sanitation and conservation of foods, with explicit directions for storage temperatures and lists of food items requiring storage under specific temperatures and conditions. The remainder of the 209 pages contains a vast amount of material in the form of compact yet clearly stated recipes, written in a direct style and with no unnecessary folderol. Now that meat is more plentiful, the dietitian —or any other devotee of good food—could spend a happy morning reading the chapter on entrées, with its directions for the perfect schnitzel Holstein, beef and kidney pie, boiled beef with horseradish sauce, the ragout, grilled chop and steak. And those "who on the spinach leaf can dine" will find good browsing in the chapter on vegetables, herbs, grains, fungi, etc., in which the author appears not to have overlooked a single edible shoot or bulb, from cardoon to scorzonera, with stopovers en route for a bit of pokeweed, Iceland moss, and laver.

Excellent, too, is the chapter on sauces, gravies, and dressings, in which the preparation of the first is presented according to the principles of French cuisine, with the *velouté*, the *béchamel* and the *espagnole*, once perfected, opening the door to almost endless variations. Another interesting classification is the "pulp-fruit sauces."

All ingredients in bread, cake, and pastry recipes are presented by weight. Starting with flour at 100 per cent, the percentages of the several ingredients have been worked out, thus facilitating calculations necessary to arrive at the required quantity.

There is much more in the book that deserves mention—the glossary of seasonings and that on food terminology, for instance. It is hoped that at some future time this compilation, with suitable revisions, will be generally available to all managers of large group food services.

How to Preserve Food. By Walter W. Chenoweth, Professor Emeritus of Horticultural Manufactures, Massachusetts State College. Boston: Houghton-Mifflin Company, 1945. Cloth. Illustrated. Pp. 277. Price $2.50.

O lackaday!—in an activity long pre-empted by women, the home preservation of food, a man has succeeded in demonstrating his facility by writing the first completely detailed and finished work on the subject.

With workmanlike efficiency he presents, first, the odds to be overcome—the molds, the yeasts, and the enzymes—and then tells how to outmatch these. First the reader is given a good perspective for the task in a general discussion illustrated with photographs of the tools essential in the home food preservation program, including slicers, choppers, can sealers, and pressure cookers. The approach is always practical and sufficiently simple, yet scientifically sound.

While we haven't tried it, we are sold on the idea of using one of our favorite tools, a hairpin or paper clip, to remove cherry pits sans loss of juice. When it comes to cutting corn from the cob, however, we think the author would do better with a large old-fashioned wooden bowl or trough commonly used for working butter, than with a flat board. The reason should be obvious. Another simple device, new to this reviewer, is a wooden fruit butter-jam stirrer in the shape of a long-handled paddle, designed so that it may be readily moved back and forth across the bottom of the kettle and which permits the operator to remain in a zone safe from spatters of hot jam or butter.

Thriftily, too, the author does not overlook all possible uses for by-products. In fact the book covers every facet of the subject: the canning of fruits, vegetables, meats, poultry, and marine products; conserves, jams, and all kinds of pickles; dehydration; home storage; and preservation by freezing, in home, commercial, and locker storage freezers, all of which are illustrated and discussed.

Diet Manual. Published by the Medical College of Virginia Clinics, Richmond, 1945. Paper. Pp. 40. Price 25 cents.

According to the Foreword by Marguerite L. Pettee, chief nutritionist, and Jennette E. Berry, assistant, "This booklet of basic diets as used in the Medical College of Virginia Clinics was compiled for the use of all those concerned with the nutritional welfare of the patient. The aim of the nutrition clinic is threefold. First, to do everything possible to improve the patient's general condition through therapeutic diet. Second, to educate him so that his food habits may be improved if they are found to be poor. Third, to have the patient understand that his diet is an important part of the whole treatment. Every diet taught in the clinic is individually adapted to the needs and circumstances of the patient. If the patient has certain food habits compatible with the prescribed diet, those habits are respected."

The simplest terms possible are used in teaching the patient: household measures and servings, for example, rather than gram measurements. Quite properly, an outline of the adequate normal diet leads, followed by sample low-calorie and other typical quantitative and qualitative diets. Other features include a form for the dietary case history as used in the nutrition clinic and especially helpful instruction for allergic patients in which the food ingredients and prepared foods to be avoided are listed under the specific items such as cornstarch, corn, nuts, etc., to which the patient may be allergic. The booklet is compact, carefully prepared, and adequate in the light of its stated purpose.

Diet Manual. Prepared by the Department of Nutrition, University of Kansas Hospitals. Lawrence: University of Kansas Press, 1945. Cloth. Pp. 92. Price $2.50.

This is another manual prepared by the dietitian, Ruth Gordon, and her assistants for the use of the medical, nursing and dietetic staffs of a group of university hospitals.

In the Preface the dean of the Medical School urges that all doctors on the staff "confer with the director of nutrition or therapeutic dietitian concerning specific problems, for we realize individualization of the patient is important and every diet must consider his likes and dislikes. The plan has been to keep all dietary treatment simple, economical, and practical."

The content of the manual permits just that to be done. Part I covers the adequate normal diet including routine hospital diets; Part II, modifications of the adequate normal diet; Part III, miscellaneous diets; Part IV, weighed diets; Part V, special variations of normal diet; and Part VI, diet served in tuberculosis unit.

As the price and the above outline somewhat indicate, this manual is much more detailed than that cited in the preceding review, yet it is also compact. Logically and carefully edited, it's ready usefulness is enhanced by a complete index.

Home Economics Teaching as a Career. Published by the American Home Economics Association, 620 Mills Building, Washington 6, D. C. Paper. Pp. 10. Single copies 10 cents; 100 or more 8 cents each; 1000 or more 5 cents each.

This is an attractive, profusely illustrated pamphlet addressed to the high school student, setting forth the requirements and advantages of a career as a home economics teacher. A brief quiz is included intended to show whether the prospective college girl should take the home economics course in college.

Current Literature

Contributed by Bernardine B. Lewis and Janet Engebretsen, Dietary Department, Johns Hopkins Hospital, Baltimore; and the Journal Staff.

AMERICAN JOURNAL OF DIGESTIVE DISEASES

Vol. 12, September 1945

* High dosage vitamin C in allergy. S. L. Ruskin.—p. 281.

Vitamin C in Allergy. Vitamin C seems to play a valuable role in the treatment of nasal allergy. Large doses ranging from a minimum of 250 mg. to an optimum of 750 mg. are given either orally or by injection. Vitamin C is advantageous to allergic patients with or without desensitization and in some cases proved superior to desensitization.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

Vol. 70, July 1945

* Lipodystrophy with involvement restricted to the four extremities. E. F. Patton.—p. 31.

Lipodystrophy in Children. Characteristic areas of lipodystrophy involve face, neck, trunk, and shoulder girdle. Recently cases have been described in which lower extremities only were involved. A case report is given of a 5½-year-old girl whose body is plump but who shows an entire lack of fat on the legs and arms. Vitamin and diet therapy have failed to improve her condition, as yet undesignated; she has remained about the same for 18 months.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

Vol. 210, July 1945

* Rickets in Iceland. N. Dungal.—p. 70.

Vol. 210, August 1945

* Vitamin levels in sprue. D. Cayer, J. M. Ruffin and W. A. Perlweig.—p. 201.

Vol. 210, September 1945

* The pathology of the pancreas in experimental diabetes. G. L. Duff and E. G. D. Murray.—p. 381.

Rickets in Iceland. A study of children between 3 months and 2 years of age was made to determine incidence of rickets in Reykjavik. Many physicians have the misconception that no rickets exists here. Clinical examination, however, indicated that 66% of the group had rickets while roentgen ray pictures showed 77% were rachitic. Few children had bones with lines of calcification which were straight; in spite of cod liver oil, the children had rickets. Explanation of this was: too small dosage in a country where the winter months are long and dark.

Sprue. Some sprue patients have improved after treatment with niacin; others do not respond at all. Three groups were tested for various levels of vitamins. They were: 12 sprue patients, 24 B complex deficiency patients and 30 normal medical students. Vitamin A and carotene levels were much lower in sprue patients than in the deficiency group; ascorbic acid, thiamin, and riboflavin were lower in cases of sprue, but niacin was higher in the deficiency group, although still below normal. Practical application of the vitamin level could be made in diagnosis of sprue and in determining if that were correct. Amebic dysentery patients have a carotene level 3 times as high as in sprue patients; pernicious anemia could be distinguished from sprue as both the A and carotene levels are higher than in sprue.

Experimental Diabetes. Three types of experimental diabetes are possible: surgical, endocrine administration, and chemical. No great skill is required to perform partial pancreatectomy, the oldest way to produce diabetes mellitus experimentally. Over a period of several weeks repeated injections of anterior pituitary extract will cause diabetes. Within 24 hours a single injection of alloxan can produce a chemical diabetes. This is a very fine review of 2 years of reports of experimental diabetes which gives enough physiological data to support various points. A possibility is suggested that alloxan might be a causative factor in human diabetes.

ANNALS OF INTERNAL MEDICINE

Vol. 23, July 1945

* Tissue calcification and renal failure produced by massive doses of vitamin D for arthritis. T. S. Dankowski, A. W. Winkler and J. P. Peters.—p. 22.

Vol. 23, September 1945

* The diagnosis of beriberi heart disease. M. A. Blankenhorn.—p. 398.

Vitamin D Therapy in Arthritis. Two arthritic patients were treated over a period of several years with massive doses of vitamin D and the results were quite startling. One woman received 150,000 to 200,000 units daily for 6 years; at the end of that time, she had anemia, high calcium and phosphorus in the serum, and a decalcification of all bones of the skull as well as calcium deposits in the soft body tissues. After vitamin D therapy had been discontinued for 2½ years, she was almost normal except for the bone changes. The second patient developed hypertension and renal failure which never disappeared even after all therapy ceased. Careful dosage and administration of vitamin D to arthritics are imperative until some principle has been formulated for its use.

Beriberi Heart Disease. The departments of cardiology, neurology and nutrition at the Cincinnati General Hospital are convinced that beriberi heart disease is not so uncommon as is generally supposed; it has been diagnosed there 10 times in the last 4 years. The accepted criterion for diagnosis is described, part of which is nutritional. The investigators believe that a gross deficiency of diet for 3 months or more may lead to this form of beriberi.

ARCHIVES OF INTERNAL MEDICINE

Vol. 76, August 1945

* Powdered stomach in the treatment of fatty liver and other manifestations of infantile pellagra: its significance with reference to the problems of edema and steatorrhea in infants and adults. T. H. Gillam and J. Gillam.—p. 63.

Infantile Pellagra Treatment. Massive doses of vitamins failed to diminish the mortality rate among the pellagrous children in Johannesburg. Observers were aware of the role the liver played and noted that in animals lack of a specific vitamin in the diet caused a fatty liver; yet addition of this single vitamin would often intensify the lesion. Administration of powdered stomach of small animal pellagrins improved the clinical picture and depleted the stores of fat in the livers. A lengthy discussion is included describing the work on 23 infants having pellagra, naming edema, dermatitis, cheilosis, steatorrhea, and fatty liver as the most important symptoms. Since powdered stomach was so successful in improving the pellagrins it is recommended for any disease in which steatorrhea plays an important part.

BULLETIN OF THE JOHNS HOPKINS HOSPITAL

Vol. 77, July 1945

* Hypersensitivity to iodine as a cause of periarteritis nodosa. A. R. Rich.—p. 43.
* The dietary role of histidine in the immature and adult rat. A. A. Albanese and J. E. Frankston.—p. 61.

Hypersensitivity to Iodine. Anaphylactic, hypersensitive reaction to sulfonomides and foreign serum can cause periarteritis nodosa. Likewise, drugs such as iodine often cause a hypersensitivity manifested by fever, lymph node enlargement, cutaneous eruptions, and eosinophilia. A case is presented to show the drastic results caused by iodine medication; the patient developed periarteritis and died 3 weeks after iodine was given.

Dietary Role of Histidine. Growth curves plotted as a result of feeding rats various protein mixtures indicate histidine is required for growth of the young rat and for weight maintenance in older rats. One observation is made which is of particular interest: animals fed a diet containing Amigen grew twice as fast as those on the control diet (containing 20% more natural amino acids).

CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 53, September 1945

* Insulin and diabetes—in retrospect and prospect. The Banting Memorial Lecture 1945. C. H. Best.—p. 204.

Insulin and Diabetes. We need a reliable method for detecting small quantities of insulin in the blood so that a diagnosis may be made more quickly. Insulin may be given by mouth but it is wasteful and hazardous.

ENDOCRINOLOGY

Vol. 37, August 1945

* The cholesterol and ascorbic acid content of the adrenal, liver, brain, and plasma following hemorrhage. G. Sayers, M. A. Sayers, T. Y. Liang, C. N. H. Long.—p. 96.

Hemorrhage. Both the cholesterol and ascorbic acid contents of the adrenals of the rat are decreased after hemorrhage. Shock induced in rats by hemorrhage is associated with marked depletion of adrenal cholesterol and ascorbic acid, and there is no

tendency for recovery in the levels of these substances before death. The plasma cholesterol falls during shock due to hemorrhage but the cholesterol content of the liver and brain is unaffected by either fatal or nonfatal hemorrhage. It has been suggested that the vitamin C might be used in the treatment of shock because of the dynamic changes in the ascorbic acid content of the adrenal which follow hemorrhage and shock.

HOSPITAL CORPS QUARTERLY

September 1945

* Frozen meals. V. Ullman.—p. 57.

Frozen Meals. The Naval Air Transport Service conducted an experiment on 59 men who were fed frozen meals. The food is precooked and then frozen on a paper plate resembling china. The "whirlwind oven," a small aluminum box which operates on a thermodynamic principle to bring food from a temperature of 20 to 145°F. in 15 min., is used. Upon experimentation with the menus it was found that creamed foods should be avoided since separation takes place under quick-freezing. Gas-producing foods should also be avoided. Otherwise the results with the use of these foods were favorable.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 129, October 6, 1945

* Skin diabetes: Hyperglycodermia without hyperglycemia. E. Urbach.—p. 438.
* Intravenous nutrition for eight weeks: partial enterectomy, recovery A. Brunschwig, R. R. Bigelow and S. Nichols.—p. 441.
* Ketosis. Editorial.—p. 448.

Skin Diabetes. The term "skin diabetes" is suggested to serve as a designation for the syndrome of therapy-resistant skin disease (generally presenting the clinical picture of furunculosis, sweat gland abscesses, eczema, pruritis), high fasting skin sugar level together with a normal blood sugar curve, and pronounced improvement of the dermatosis as well as fall in the high skin sugar level on a low carbohydrate diet, sometimes combined with insulin. The following points of evidence lend support to the view that there is a connection between the clinical syndrome and a disturbance in the carbohydrate metabolism, as in diabetes: (1) the high fasting skin sugar levels, which attain and even exceed 80 mg. per 100 gm.; (2) the pathologic and characteristically diabetic course of the skin sugar curve following oral sugar forcing; (3) the return to normal of the fasting skin sugar level, as well as of the skin sugar tolerance curve after a low carbohydrate diet, notably in combination with insulin. The evidence tending to negate any connection with a true pancreatic diabetes has been given due consideration. It may be safely said, on the basis of clinical experience, that a diabetic diet should unhesitatingly be tried in cases of therapy-resistant skin diseases such as furunculosis, eczema, or pruritis, even when the blood sugar tolerance test is normal.

Intravenous Nutrition. A patient with a large upper jejunal fistula received "intravenous casein digest, dextrose and saline solution intravenously" for a period of 8 weeks. No food was ingested by mouth. After 46 days laparotomy for partial enterectomy and enteroenterostomy were performed, closing the fistula. Recovery was uneventful, intravenous nutrition being continued for 9 days after operation. The experience in this case suggests that intravenous nutrition permitting the withholding of food by mouth might prove beneficial in the management of large fistulas high in the small bowel, since discharges from the fistulas would be appreciably reduced and thus permit a degree of healing which might then be completed by surgical closure.

Ketosis. The concept is brought forth that insulin may be either ketogenic or antiketogenic. When insulin is given in such amounts that hypoglycemia results there is a reduction of the glycogen stores in the liver, since there is a tendency to maintain the glucose level of the blood. Concurrent with the low liver glycogen there is an increased metabolism of fat by the liver and a resulting ketonemia and ketosuria. On the other hand, if insulin is given in amounts sufficient to halt glycogenolysis there will be an increased carbohydrate utilization by the liver and a resulting decrease in fat oxidation which will reduce the amount of ketone bodies produced. Thus, in man, ketonuria and aglucosuria may be present at the same time; it appears that ketonemia and ketosuria are normal physiologic responses to a lack of carbohydrate and an increased fat metabolism in the liver.

JOURNAL OF NUTRITION

Vol. 30, September 10, 1945

* Nutritional studies on milk fat. I. The growth of young rats fed milk fat and certain synthetic glycerides as supplements to a fat-free diet. J. L. Henderson, E. L. Jack, S. Lepkovsky and D. F. Reid.—p. 169.
* Nutritional studies on milk fat. II. The growth of young rats fed glyceride fractions separated from milk fat. E. L. Jack, J. L. Henderson, D. F. Reid and S. Lepkovsky.—p. 175.
* Physiological availability of the vitamins. III. The effect of dietary ascorbic acid oxidase. M. Hochberg, D. Melnick and B. L. Oser.—p. 193.
* Physiological availability of the vitamins. IV. The inefficiency of live yeast as a source of thiamine. M. Hochberg, D. Melnick and B. L. Oser.—p. 201.

Milk Fat. An adequate basal diet that is fat-free can be prepared. In experiments on 2 groups of rats the rats receiving the milk fat and triolein showed faster growth rates than those receiving other diets. There was no significant difference between the milk fat and the triolein diets. Trilaurin, when fed at the level of 20%, enabled the rats to grow at about the same rate or slightly slower than the rats on a fat-free diet.

Vegetable Versus Animal Fat. Weanling rats were fed 5 glyceride fractions separated from milk fat by precipitation from a solvent. The diet containing natural milk fat which had not been solvent-treated gave greater growth than the other diets. The 53° filtrate was superior to all other diets containing solvent-treated fat; the 7° precipitation and the fat-free were the poorest. The composition of the fat suggests that the oleic acid content or possibly the total unsaturation might be a contributing factor to the growth of the rat.

Ascorbic Acid Oxidase. A dietary mixture was incubated at body temperature for 6 hours with a loss of approximately 60% of the biologically active vitamin. Only slight oxidation occurred beyond the changing of ascorbic acid to dehydroascorbic acid. When extra ascorbic acid was added to the dietary mixture, much of the added vitamin was oxidized to and some even beyond the dehydroascorbic acid stage. In the human being apparently ascorbic acid oxidase is destroyed or its activity is inhibited in the gastro-intestinal tract.

Thiamin in Live Yeast. Baker's yeast is capable of removing large quantities of thiamin from solution by the actual passage of the thiamin into the cell proper. In this experiment it was proved that only 33% of the claimed potency of thiamin present was physiologically available.

PUBLIC HEALTH REPORTS

Vol. 60, October 12, 1945

* Anemia and granulocytopenia in rats fed a diet low in pantothenic acid. F. S. Daft, A. Kornberg, L. L. Ashburn and W. H. Sebrell.—p. 1201.

Pantothenic Acid and Anemia. Rats given certain purified diets which were low in pantothenic acid developed anemia, leucopenia, granulocytopenia, and bone marrow hypoplasia. The inclusion of pantothenic acid in these diets almost completely prevented the appearance of these deficiency signs. Therapy with pantothenic acid was much less successful than was prophylaxis. Anemic animals appeared to respond to this treatment somewhat more consistently and rapidly than did those which were granulocytopenic. Evidence is presented which indicates that one result of withholding pantothenic acid from these experimental animals was the development of an *L. casei* factor deficiency. The nature of the additional deficiency or deficiencies is discussed.

SCIENCE

Vol. 102, September 28, 1945

* Role of unsaturated fatty acids in changes of adipose and dental tissues in vitamin E deficiency. Special article.—p. 327.

Vitamin E Deficiency. In vitamin E deficient rats the yellow-brown discoloration of adipose tissue depends upon the presence of dietary cod liver oil, and the depigmentation of incisor enamel, upon dietary fats. Highly unsaturated fatty acids in absence of vitamin E act on the enamel organ in such a way as to inhibit the deposition of the normal iron-containing layer, resulting in white appearance of the enamel surface.

SCIENTIFIC MONTHLY

Vol. 56, September 1945

* Science and dietary wisdom. S. Brody.—p. 213.

Dietary Wisdom. While only 10 to 15% of our citizenry show clinical symptoms, 50 to 70% are said to have subclinical nutritional disorders, to suffer from decaying teeth, bleeding gums, digestive disturbances, etc. The most nutritive parts of the grain, the germ, middling and bran, are generally removed in milling and fed to hogs. Yellow corn is nutritionally superior to white corn, but the poor white people in the South prefer the latter. The rat and the bee show dietary wisdom in the selection of their food. Whole wheat flour and whole milk would be best for the proposed complete bread.

SOUTHERN MEDICAL JOURNAL

Vol. 38, September 1945

* Dietary deformity of the tongue. Editorial.—p. 633.

Dietary Deformity of the Tongue. A particular malformation of the tongue of chickens may be caused by a particular nutritional deficiency of a particular amino acid. These amino acids were isoleucine, leucine, or phenylalanine.

AMERICAN COOKERY

Vol. 51, September 1945

* Europe's future—food or famine?—p. 22.
* Things to come.—p. 24.

Food in Europe. In assisting the people of continental Europe we must make clear that the problems are not of our making and not entirely for our solution. Italy has no transportation for farm products to market or for refugee peasants back to the land. Food rots in some areas; people starve in others. The meat supply in France is about ¼ lb. per month. The children still get 1 pt. milk per day, but the supply is low. Spain's problem is one of managerial and political ineptitude. Prices have risen but wages have not. Some of the best artisans who were loyalists are still in concentration camps.

New Foods. Some new items in prospect are cherry jam without lumpiness; orange-cranberry marmalade; and perhaps frozen guava purée for jam, candy, baking industries; fruit pectins enriched with guava purée; quick desserts of processed potato starch; quick whip mixture with calcium concentrate, sugar, and water; a year-round date candy; creamed dates and honey.

AMERICAN RESTAURANT MAGAZINE

Vol. 29, September 1945

* Super speedy service place. C. Wagner.—p. 32.

Fast Restaurant Service. Explains how speedy service can be had in a restaurant occupying a building 125 x 43 ft. with a basement the same size. The dining room has a seating capacity of 200, which includes 45 at the lunch counters and 155 at booths, or a net dining room area of 20⅜ sq. ft. per seat. Approximately one quarter of the first floor is taken up by kitchen and public washrooms. Layout is intended to ensure fast service at any seat in the dining room.

FOOD INDUSTRIES

Vol. 17, October 1945

* Salaries for food technologists.—p. 71.
* Making and canning sauerkraut.—p. 94.

Carbon dioxide in the food industry—Part III. G. T. Reich.—p. 96.

* Vanillic acid esters as preservatives. I. A. Pearl.—p. 99.
* Effect of storage temperature on bacteria in egg powder. L. S. Stuart, H. E. Goresline, H. F. Smart, V. T. Dawson.—p. 100.
* Freezing cooked foods—Part II. J. G. Woodroof and I. S. Atkinson.—p. 105.

Respect vs. Pay. "Respect and money go together. It may be entirely a human failing, but this writer has yet to meet the business man who does not undervalue that for which he has underpaid."

Sauerkraut. Important steps in the operations of manufacturing canned sauerkraut from coring the cabbages to cooling the heat-processed cans, are shown by means of pictures taken in the plant of Empire State Pickling Co., Phelps, N. Y.

Vanillic Acid. During the past several years there has been an acute need for nontoxic preservatives to be used in perishable foodstuffs shipped or stored without benefit of refrigeration. At present, sodium benzoate is the only preservative used for this purpose, but it has failed to solve many of the important food preserving problems. When the Institute of Paper Chemistry recently developed a simple process for the quantitative transformation of vanillin to vanillic acid, the esters of vanillic acid were investigated for their food preserving properties, with promising results. Food preservation studies now in progress demonstrate the efficiency of vanillic acid esters in preserving such foods as salt fish, fresh fruit juices, vegetable juices, cheese spreads and bread. Where it can be demonstrated that ethyl vanillate will make possible the delivery of acceptable food products to the armed forces, its use in amounts up to 0.1% will be accepted by the officials of the Federal Food and Drug Administration.

Storing Egg Powder. The highest temperature at which spray-dried whole egg powders of average sanitary quality could be stored for 48 weeks without showing pronounced evidence of bacterial cell catabolism was about 45°F. A temperature of 32°F. appeared to be considerably safer.

Freezing Cooked Foods. Fried foods—steaks, chicken, pork chops, and fish and other seafoods—held in freezing storage lose crispness and gradually develop a warmed-over flavor. This may be due to the fact that it is not practicable to package these foods in a solid pack. If they are to be frozen after being fried, they should be covered with gravy, sauce or oil. Large cuts of meats cooked by boiling, baking, or roasting can be very satisfactorily preserved by freezing when adequately wrapped. Other cuts of meat which may be preserved in excellent condition by freezing after being cooked include stew meats and trimmings which can be packed solid and protected from the air by covering with broth or fat. Also, broth obtained from cooking bony pieces can be satisfactorily kept for many months. Combination dishes containing meat and vegetables may be frozen with very good results. Beef stew, shrimp creole, lobster Newburg, and vegetable-beef soup all have been successfully frozen in the laboratory. Article includes formulas for sauce for creamed vegetable and meat dishes; Newburg, thermidor and rarebit sauces; and fondue. Breads of all kinds, rolls, biscuits, fruit cakes, pound cakes, plain cakes, gingerbread, cookies, and pies have been kept successfully in freezing storage for many months, provided they were so packaged as to prevent desiccation, also pasteurized cream and butter. Canned goods, which usually contain small amounts of sugar or salt, freeze at about 26°F. Other than a slight increase in softness of such products as snap beans, asparagus, okra and tomatoes, there are no permanent alterations in them after they are thawed. Canned foods containing cooked starch—such as cream-style corn, thickened soups, potatoes, dry beans or peas—are changed in physical form, but upon thawing the original form is completely restored. Canned meats are rendered slightly more soft by freezing, while the palatability remains good for an indefinite period. Cooked meats for freezing should contain as little fat or seasoning as possible. Roasted peanuts and peanut products, including peanut butter, peanut butter sandwiches, and candy, are kept in excellent condition when frozen. Because freezing breaks the emulsion, mayonnaise should not be frozen nor should it be combined with other foods for freezing. To date, fresh vegetable salads have not been very successfully frozen. Dill and sweet pickles become limp and tough when thawed and have a large amount of leakage. Bakery products and other crisp foods should be thawed in the package to prevent moisture from condensing on the food and causing it to be soft. After complete thawing, they should be kept airtight until served.

HOTEL MONTHLY

Vol. 53, September 1945

* A plan for hotel safety program.—p. 32.

Accident Prevention. Safety programs in hotel work require more intensive planning than like programs in industrial plants where a worker is usually at his bench all day, performing certain well defined jobs, each of which can be surrounded with measures that help to protect him from accident. In a hotel very few employees are stationed at one particular place while on duty, the nature of their work requiring a great number to move from one part of the building to another, performing a wide range of tasks, most of which are difficult to isolate with equipment that will prevent accidents. This article includes photographs taken by the National Safety Council illustrating the wrong and right way to pick up broken glass, push meat through a grinder, open a barrel of produce, light a gas oven, and remove pans from a stove.

JOURNAL OF HOME ECONOMICS

Vol. 37, October 1945

* They speak his language. A. C. Cowing.—p. 487.
* The home economist in social welfare work. C. Dunphy.—p. 490.
* Selling corn meal enrichment. J. McDill.—p. 493.
* A township nutrition program. E. C. Miller and H. R. Swank.—p. 503.
* Pentagon Post trainees. Comment.—p. 513.

Readability. "No one need feel that simplifying his writing is either beneath his own dignity or an insult to the intelligence of his readers. After all, some of the most effective writing in the English language, the most treasured among our literary masterpieces, has been in this direct and simple style. Such a direct style is highly to be recommended even for writing which aims at college graduates, at professional people, because it makes possible more rapid reading. Most professional men and women these days are so overburdened that they can with difficulty find time even for reading in their own field. Anything that reduces the time needed for such reading is gratefully received, and professional publications are beginning to recognize this fact."

Home Economists in Social Welfare Work. Both home economists interested in the social welfare field and agency adminis-

trators need to become familiar with *Qualifications for Home Economists in Welfare Agencies*, the tentative report of a joint committee of the American Dietetic Association and the American Home Economics Association, which defines the job, qualifications, training, and experience needed by home economists in this field. A few reprints are still available from A. H. E. A. headquarters.

Corn Meal Enrichment. The South Carolina nutrition committee was the first in the nation to sponsor legislation for white flour and white bread enrichment. The nutrition department of the South Carolina Experiment Station has kept rather close check on the operation and the feasibility of the whole plan, including corn meal enrichment. After almost a year's work on mechanical and technical problems, the program is now gaining momentum. The millers are keenly interested in the welfare of their community and, as a rule, are most cooperative when they fully understand the program. Where this interest has not been readily aroused, consumer demand has helped to stimulate it. The manager of one school lunchroom kept asking for enriched corn meal until "something just had to be done about it." Information about the enrichment program needs to be carried through all media in order to reach all people.

School Lunch Improvement. Among the results of the nutrition program initiated in 1943 in Manheim Township of Lancaster County, Pa., where the population is predominantly Pennsylvania Dutch, frugal, and hard working, is improvement in cafeteria meals in school lunchrooms. Food is more carefully prepared; more fruits and vegetables are on the menus; more special plate lunches are sold; milk consumption has risen 24%; the number of children taking meals in the cafeteria has increased greatly. Weaknesses still found in the cafeterias can be eliminated when more time is allotted cafeteria managers for supervision.

Pentagon Post Training Course. The Pentagon Post Building is now serving as the first A. H. E. A.-approved training center for 10 home economists who are grooming themselves for the institution administration field, through efforts of the association's committee on apprentice training. Prior to the establishment of the course, the subcommittee on institutional administration, of which Ruth Lusby, formerly industrial feeding consultant for WFA, is chairman, had drafted a 4-page statement as to what any industrial food service establishment would have to do and to be in order to qualify as an A. H. E. A.-approved training center. It is said that the course provides for intensive work in food production, food service and merchandizing, accounting and cost control, sanitation and maintenance, purchasing and food storage, personnel management, nutrition education, and supervision.

PRACTICAL HOME ECONOMICS

Vol. 23, September 1945

* Let students promote home economics. C. Biester.—p. 374.
* HEIB field day. G. A. Callahan.—p. 375.
* Time and motion study. V. Allen.—p. 376.
* Building for the future. K. C. Wisely.—p. 386.

Promoting Home Economics. The question of why more girls do not take home economics is asked in connection with a description of a talk by a home economics college student to high school students. Some of the answers are: often school administrators and parents do not comprehend the value of home economics education and hence do not urge girls to enroll; many home economics teachers do not try to interest girls in taking home economics or to help them overcome schedule difficulties; facilities for teaching home economics are antiquated or inadequate; a mistaken idea that home economics is for inferior pupils still prevails in some schools; girls do not like housework and hope to have maids do it for them.

Home Economics in Business. "If you are a capable, well-trained home economist, you can be sure of a good job in the post-war world. Why? Because tomorrow's world will center around better living—better-planned houses, better foods, better clothing at lower cost. All of these spell new jobs for bright young home economists."

Time and Motion Study. In a "management of time and energy" project, a careful analysis of the job must be made, routing or directing sequence of work must be studied, and possibilities for eliminating or combining certain parts of a job should be sought. Selection and arrangement of equipment should be considered. The stop watch is a timing device capable of recording accurately fractions of a second. The pedometer similarly makes an accurate record of distance walked. The cyclograph is a photographic device which registers the pathway of light of a small electric bulb attached to some portion of the body that is in action, as the wrist. The micrometer is an adaptation of the motion picture. The process is first filmed and then resulting films show actual movement.

School Lunches. This is the first article in a new school lunch section, edited by Katherine Connelly Wisely. One item contains the suggestion that an easy way to evaluate systematically the nutritional effectiveness of the school lunch is to make a quarterly check using a score card, which is shown.

WHAT'S NEW IN HOME ECONOMICS

Vol. 10, October 1945

* Simple rules for fish preparation. D. E. Shank.—p. 48.
* Selection and use of cooking utensils.—p. 80.
* Advantages of motion pictures in home economics education. R. A. Mosser.—p. 85.
* They come and go. M. M. Carothers.—p. 105.
* Here, there and everywhere. W. S. Pendergast.—p. 108.

Fish Preparation. Includes the technique of frying, baking, broiling, boiling, and steaming fish, with suggestions for garnishing and serving.

Cooking Utensils. An excellent article with illustrations on the selection and use of cooking utensils—especially timely now that new equipment has a number one place in the spotlight.

Motion Pictures. By its very nature the motion picture commands almost complete attention and concentration from every member of a group. The room is darkened and the eyes of each student are focused on the screen. Each listens for the commentary that accompanies and clarifies the picture. In fact, the person becomes a part of what is happening on the screen. If the event presented is historical, she becomes a spectator actually present, if it is a film on how to bake a cake, she feels that she is mixing the ingredients and following the pictorial and verbal directions. This means that the teacher has a better opportunity to obtain the optimum amount of learning, provided she has properly planned for the use of the film.

Lunchroom Managers. Applicants for positions as managers in Detroit university and secondary school lunchrooms must be graduates of 4-year college courses, with majors in institution management. They are selected on the basis of scholarship, experience, personal fitness, and physical strength to enter as interns for a minimum period of 20 weeks and are placed as regular managers as vacancies occur. A thorough training course in Detroit lunchroom management, constructed and supervised by the Lunchroom Department, fits qualified applicants for the job. Managers in elementary school units are selected for training from the general help staff or from applicants with suitable experience and fitness. Cooks are trained on duty and promoted to positions as such when ability is demonstrated and as vacancies occur. There are 3 classes of cooks; first, second, and third, according to the duties assigned. Cashiers and checkers are recruited from a group of applicants, with consideration given to those with experience in handling money and clerical records.

Federal Lunch Program. "The federal lunch program is proceeding for another year on a hand-to-mouth basis with a $50,000,000 agricultural appropriation. All this uncertainty among the bills is not a good thing, but it is certainly not all bad either. The bills are getting better as the legislators know more about the problem. The last bill introduced (S962 and HR3143, later modified and changed to HR3143) was the best yet produced. There has been some criticism about the financial requirement this bill makes from the states and there is feeling in some quarters that the amount of money allotted to the Office of Education is too much. Maybe the final bill will change these two items to please everybody. But the principle of joint responsibility between the Department of Agriculture and the Office of Education seems to be firmly established and this is important. The Department of Agriculture is the logical agency to handle the food and should be allowed to consider the school lunch as a part of the total agricultural economy of the nation. On the other hand, a better tie-in with the Office of Education would certainly help integrate the school lunch program with the educational program —a step sadly lacking at present. There is no doubt that the agency which has handled the program could have done a better job in this respect if it had had the authority to insist on the nutrition education program which it recommends. The Office of Education and State Boards of Education will have the authority to insist and the money to make the program workable. It seems safe to say that from here on in any bill will deserve our support."

News Notes

Dietitians in U. S. Public Health Service. J. A. Trautman, senior surgeon and assistant chief, Division of Commissioned Officers, writes, "There are now five dietitians commissioned in the Regular Corps of the Public Health Service and it is hoped that examinations will be given within a year for other dietitians. When plans for the examination are completed, notification will be sent to your office.

"At the present time the Public Health Service is in need of a number of dietitians and will welcome applications. Applications for reserve commissions may be sent to the Office of the Surgeon General at any time. Approximately half of the number of dietitians in the Public Health Service are at present in the commissioned corps."

Moving? For a period of 6 weeks following the mailing of the American Dietetic Association membership billing on September 1, the Chicago office received 1,376 changes of address. This influx of changes at a time when the office is already taxed to capacity with the routine involved at the close of one fiscal year and the start of another, represents a volume that is not readily handled. During the fiscal year ending August 31, 1945, a total of 5,753 changes of addresses were received.

The cooperation of every member is requested. Please notify the Chicago office of the Association immediately of any change in address, in order to be assured of receiving every issue of the JOURNAL promptly.

Victory Collection of Canned Food. Through the nationwide collection of canned food, instituted October 8 and to extend for an indefinite period, the American people will have an opportunity to donate commercially canned food for the hungry millions in war devastated lands, it has been announced by Dan A. West, director of the Division of Contributed Supplies for UNRRA. All types and varieties of canned foods will be accepted. Contributed food must be packed in tin, as glass containers present transportation and packing difficulties. All contributed commercially canned food will be sent to war devastated areas overseas for free distribution through UNRRA to needy men, women, and children, and will supplement that being furnished for a minimum basic diet.

Employment of Returning Veterans. In an October 21 release to editors of scientific and technical publications it was announced that returning veterans, scientifically and professionally qualified, who are seeking employment in industry, nonprofit research institutions, colleges, and universities are offered the help and extensive resources of the National Roster of Scientific and Specialized Personnel, 1006 U St., N.W., Washington 25. Many plan to return to their former employers and need no help.

Numerous statements have been made, apparently on good authority, that there are personnel shortages in most of the professions. It remains for an agency such as the National Roster, operating on a nationwide basis, to assist all other efforts on the part of professional societies and individuals to find employment for all those who are rapidly becoming available. Separation centers are cooperating with the National Roster to assist professionally qualified veterans to find employment in civil life. Return postcards, and application and registration blanks are provided and each center will be supplied at least every two weeks with a current list of positions open. In order to save time and increase chances of placement, these summaries are sent at the same time to several different employers having identical requirements.

Professional and technical societies engaged in organized efforts to place members of their professions are privileged to ask the cooperation of the National Roster which is prepared to undertake placement in practically all professional fields except elementary and high school teaching, and does not restrict its help to the fields in which it maintains its registry.

Clothing Collection. Starting January 7, 1946, the Victory Clothing Collection for Overseas Relief will continue through January 31. This campaign will be similar to the United National Clothing Collection of last spring which provided serviceable used clothes, shoes, and bedding to millions of people in liberated lands.

Sugar Research Foundation Grants. New grants by the Sugar Research Foundation, amounting to $38,200, have been made to Purdue University, University of Utah, University of Texas Medical School, University of Wyoming, Emory University Medical School, California Institute of Technology, Tufts Dental College, University of Rochester, and the New Jersey State Experiment Station. The studies will seek new industrial uses of sugar and will further explore the values of sugar as a food.

National Food Situation. This year's grape crop promises to be the second largest in this country—2,812,000 tons, 95% produced in California, according to USDA. About 60% of the California crop will be raisin varieties, 20% table varieties.

Ample supplies of turkey for both the armed forces and civilians are forecast for the coming holiday season. The 1945 crop is roughly one fifth larger than last year's production of 547,000,000 lb., dressed weight.

A 4% increase in the quota of fats and oils for use in shortening and cooking and salad oils was provided for in the fourth quarter of 1945, as an emergency allocation in addition to the already established quota of 88% of the average use in 1940–41. The quota percentage applicable to margarine manufacturers—95% of 1944 usage—remains unchanged.

USDA announced October 2 that 10,800,000 lb. canned fish, packed in airtight containers, had been made available for importation into the United States, consisting of about 100,000 cases brisling sardines, 175,000 cases sild (musse) sardines, and about 100,000 cases kippered herring.

The *National Food Situation*, August-September, states that in general the civilian food situation this fall and winter will be significantly easier than it has been so far in 1945, and prospective supplies of many foods for civilians will be larger than those available in the fall and winter of 1944. The same issue includes a summary of the food situation in continental Europe during the war, prepared by Lois Bacon and Mrs. Louise Butt, Office of Foreign Agricultural Relations, in which it is stated that continental Europe's production of food to be consumed in 1945–46 is certain to fall to a point below any reached during the war.

Approximately 6,000,000 lb. canned sardines, tuna and "tuna-like" fish is available for importation into the United States from South America, USDA announced October 9. These products previously were allocated to UNRRA, but because of their high price in relation to other canned fish, they were not suitable for relief use.

Hens that lay heat-resisting eggs have been developed by USDA poultry scientists by selective breeding from stock that had produced eggs of unusually good keeping quality. Infertile eggs from these hens are reported by the Agricultural Research Administration to retain good table quality for 2 weeks at a temperature of 100°F. The department's scientists have bred several other lines of chickens that lay eggs superior in various characteristics, such as larger percentage of thick white than usual, so that they poach and fry better; eggs almost entirely free from blood spots; thicker, less porous, and stronger eggshells, enabling them to stand shipping and storage exceedingly well.

Markets this fall and winter should have plentiful supplies of nuts, including almonds, walnuts, filberts, and pecans, USDA predicts. More imported nuts may be on the market—Brazil nuts, cashews, etc.

The 982,000 tons of sugar allocated to U. S. civilians for the fourth quarter of 1945, not counting some delayed marketings under the third quarter allocation, is approximately equal to the 1942 quantity for civilians, although 562,000 tons lower than the quantity made available to civilians in the fourth quarter of last year. On the basis of this allocation and estimated distribution so far this year, it now appears that the civilian per capita consumption will average about 73 lb. compared with 89 lb. last year and 96 lb. for the years 1935–39.

Despite declines in acreage of some fruits, total production of all fruits has increased about 40% during the past 10 years. Two factors which have contributed to this trend are the increase in bearing surface attained as the trees grow older, and improved practices being followed in commercial orchards, according to the *National Food Situation*. Granted normal weather for the rest of this year and in 1946, abundant crops of fruits and nuts will be produced next year.

An increase of 1182 frozen food locker plants in the 48 states between July 1944 and July 1945 is reported by USDA, making a total of 6464 locker plants in active operation.

Paper and Fat Salvage Programs Continued. Need for waste paper this year will approximate the 7,000,000 tons gathered during 1944, with main promotional efforts to be centered on the voluntary agencies, according to the New York *Times*, September 23. With the War Production Board regarding the packaging situation as a major bottleneck in the reconversion process, the National Paper Salvage Program, successor to the wartime U. S. Victory Waste Paper Campaign, will redouble its efforts for maximum conservation of waste. Because the nation is still facing a shortage of industrial fats and oils, OPA and USDA announced jointly September 26 that the price paid for used fats remains unchanged but

that the number of points paid per pound would be increased from 2 to 4. There is a serious shortage of fats needed in the manufacture of soaps and other civilian goods, and the need will continue for some time to come, according to the announcement.

Developing Job Standards. Characterized as an entirely new procedure in developing job standards for use in selection and placement of personnel, the results of a research project begun in 1932 have been announced in a release from the National Institute of Vocational Research, Inc., 215 W. 5 St., Department "C", Los Angeles 13. The procedure involves use of a new-type questionnaire called the Job Qualification Inventory which can be used not only to select and place personnel but also to establish practical job specifications by which employees' or applicants' qualifications may be appraised. Accompanying the Job Qualification Inventory is a 370-page volume, *Job Placement Reference* ($10), which contains complete explanations and illustrations of the material's use in placement, guidance, and rehabilitation, with general standards for 2000 occupations and professions that may be used in the absence of company standards created as explained. Complete information may be obtained by writing to the above address.

Turkey. Directions for selecting, cooking, and carving turkeys are included in a booklet just released by the Poultry and Egg National Board, 308 W. Washington St., Chicago 6. Accompanying the booklet is a sheet of directions for cooking half turkeys. Both are presumably available free from Kathryn B. Niles, home economics director.

Bananas are at the ideal stage for eating fresh out of hand when the peel is golden yellow flecked with brown which indicates that the flesh inside is mellow and fully sweet, according to *Food and Home Notes* for October 22. Though bananas are usually sold in stores before they reach this stage of ripeness, those in good condition may easily be ripened in the home kitchen. They may be left in an open bowl to ripen but USDA suggests that probably a better way is to leave them in the bag in which they were purchased and put a moistened wad of absorbent paper with them to keep the atmosphere just humid enough to prevent the fruit from drying. Banana experts say that the fruit usually ripens best in a closed but not airtight container. The gases given off in ripening, if confined around the fruit, hasten ripening. Bananas should be kept at room temperature, about 70°F., *never* in the refrigerator or other cold place.

Sugar. USDA has announced that the final outrun of refined sugar from the 1945 beet crop was expected to be increased by 17,000 to 20,000 tons over prior estimates due to a transportation aid program financed through the Commodity Credit Corporation. The additional sugar is to be reclaimed from beet molasses by reprocessing, by what the trade terms "Steffens Houses"—special molasses processors. It is estimated that about 50,000 tons of 1945 crop straight-run beet molasses will be held at points somewhat distant from "Steffens Houses," and could not be profitably shipped to these processors without government transportation aid. This amount of molasses will yield from 17,000 to 20,000 tons of sugar which will become available for distribution during the first quarter of 1946, when offshore sugar receipts are generally smallest.

Anti-Candy Drive. According to the *Food Field Reporter*, October 15, an intensive anti-candy campaign has been launched by the New Hampshire Dental Society, and will be aided by the state Department of Education in order to help prevent tooth decay throughout the state. The dental society urges inculcating principles of mouth hygiene in young children and the avoidance of the cultivation of an artificial appetite for candy.

Quality of Texas Butter. *Factors Affecting the Quality of Texas Butter as Revealed by a Statewide Survey*, by F. E. Hanson, W. S. Arbuckle, and C. N. Shepardson, published as Bull. No. 670, Texas Agricultural Experiment Station, College Station, May 1945, reports the results of a survey of the quality of butter manufactured in various dairy producing sections of Texas. The data presented include information concerning common manufacturing methods, feeding practices, quality of cream, score value and the physical and chemical analyses of 273 samples of butter produced over a period of 32 months from 8 different sections of the state. The average analytical values for Texas butter are shown and reveal that Texas butter was harder, had a higher melting point and a lower iodine number than the normal values generally given for these constants.

Honey. Our 500 billion bees will turn out a 1945 crop of honey totaling 226 million pounds—a new high in honey production, nearly 20% above last year's crop and 16% above average. Although the size of the crop would indicate more plentiful supplies generally throughout the country, the prospects are that over half of the honey will be marketed locally and less will go to wholesalers for city trade or to commercial users like the baking industry. Under present pricing arrangements beekeepers can make more profit by selling honey direct to consumers than by selling to wholesalers.

Freezing Game Meat. The freezing and storage of game meat is definitely restricted in many states, so hunters who plan to use freezer lockers or home freezers to preserve such meat should first consult local game wardens, advises K. F. Warner, meat specialist of USDA, in a new publication, *Freezing to Preserve Home-Grown Foods* (Circ. 709). According to this booklet, warm, freshly killed game needs even more prompt attention to bleeding and chilling than domestic meat animals. Deer and other big game should be stuck and bled promptly. Hanging and dressing the carcass will speed up chilling. In warm weather, it may be well to skin large game at once so that overnight chilling will be more rapid. Venison is then handled and cut the same as beef. The thick round back and shoulder muscles are separated from the thin ribs and flank. Small game animals, such as rabbits, should be skinned, dressed, washed, and chilled promptly. Only the thick back and hindquarters are usually frozen in order to save locker space. Ribs, neck, and forelegs can be stewed while fresh to better advantage. There is little protective fat on small game meat, so it should be well protected by careful wrapping against dehydration in locker storage.

Persimmons. Much fine natural fruit sugar, ideal for puddings, cakes, and sweet spreads, goes to waste each year in the southeastern part of the United States where tons of persimmons are allowed to fall and rot, according to horticulturists of USDA. The persimmon is one of the sweetest fruits grown in this country, second only to the date. Analyses show that it is nearly one third sugar. Persimmons must be fully mature and ripe to lose their astringency, it is stated in *Food and Home Notes*, October 1. Unfortunately, this fact has not been understood generally, and the mistaken idea has persisted that persimmons are unfit to eat until they have been frosted. Actually, freezing is bad for persimmons as for any other fruit. Many of the finest persimmons are lost each year because they ripen and fall before frost—or before they are supposed to be edible. Those not edible before frost are late varieties and not yet mature.

Hash Browning. Cooking specialists remind us that a hasty cook is likely to use too high heat with hash browned potatoes, and suggest the following recipe: Melt a little fat in the frying pan. Add chopped cooked potatoes. Season with salt and pepper. Moisten with a little water—about ¼ cup to 4 cups potatoes. Cook over low heat until brown and crusty on the bottom. Do not stir. Serve folded in half like an omelet. The same directions apply to meat hash.

Storing Potatoes. Potatoes lose the least vitamin C when stored between 50 and 70°F., the Nebraska Experiment Station reports, according to USDA's *Food and Home Notes*, September 17. Potatoes held for late winter or spring should, if possible, be held above 40°F. until they show signs of sprouting, then below this temperature to keep them dormant.

Nut Cracking. Different kinds of nuts require different cracking technique to get the kernels out whole or in large pieces, says C. A. Reed, nut culturist, USDA. A rule that applies to all nuts but particularly to those with hard, bony shells is to soak them in warm water overnight, especially if they are very dry, then drain off all surface water before cracking. Many hard nuts crack better on a wooden block or on soft metal, such as lead, in which a depression has been made, than on flat metal or stone. Specific recommendations for cracking some of the common nuts are: *Almonds*—Those with harder shells may be opened quickly with a hand-grip cracker applied to the thin edges; those with soft, flaky shells may be torn apart with the fingers or squeezed apart. *Persian or English Walnuts*—Many of these may be cracked by squeezing two in the hand, or placing the nut on a flat, thick block of wood and hitting lightly with a hammer on sides or shoulders to bring out large meats. Do not pound the ends. *Pecans*—Pressure-cracking devices with lever or thumbscrew which crack by end-squeeze are best for pecans, because they give light pressure on the shoulders of the nut. *Filberts*—These cannot be cracked by hand. Hold them on a hard surface and tap lightly with a hammer, on the shoulder rather than the end. *Butternuts*—Crack with a hammer or strong lever device with cupped metal jaws. When using a hammer place one end of the nut on a hard wood or metal block and hit the other end with hammer. *Hickory Nuts*—Just enough force with a hammer on one of the flat sides of the nut does well if the shells are not too dry and brittle. The light-weight, lengthwise cracking device called a pecan-cracker is also successful. *Black Walnuts*—Usually the best cracker for this hard nut is one of the fairly heavy pressure devices. A few varieties seem to crack better with a hammer. Strike the nut on a rounded edge rather than on the flat sides where the halves join.

Canned Foods Manuals for High Schools. *Nutritive Values of Canned Foods* is the title of a booklet published by the National Canners Association, Washington 6, D. C., submitted by Marjorie H. Black, Home Economics Division. The information in the booklet is based on published results of research work done jointly by the National Canners Association and Can Manufacturers'

Institute. Suggestions for using canned foods in the family's meals are included. Copies are available on request.

A simplification of *Canned Food Reference Manual* has been issued by the Home Economics Section, American Can Company, 230 Park Ave., New York 17, under the direction of Isabel N. Young, director. Entitled *High School Manual on Commercially Canned Foods*, the booklet contains facts about the tin can; about canned foods, including food preservation, commercial canning procedures, storage and use of canned foods, etc.; and about nutrition, including canned foods in dietary patterns for good nutrition. The illustrations are unusually fine.

Dishwashing Research Project. The Board of Directors of the National Restaurant Association has engaged the Business Research Corporation of Chicago to undertake a user research study on dishwashing, glassware, silverware, and pot and pan washing equipment methods. This project will be directed toward ways and means of saving time, labor, and space with the existing or available equipment, and toward the development of the most efficient washing machines and washing equipment possible at this time, according to an announcement by the association, October 10.

Survey of Midwestern Farm Families. Five midwestern newspapers are conducting a survey of 80 midwestern city families and 80 farm families to discover comparative food habits and food purchases. The survey was begun January 1, 1945 and will continue until May, according to Bess M. Rowe, home editor of *The Farmer*, St. Paul, quoted in *Food Field Reporter*, October 15. To date monthly expenditure on food by the city family has been found to be $52.33, against $33.04 for the farm family. Farm families spend more for coffee, cereal, flour, and other packaged foods.

Survey of Army Messes. A committee of food experts has been appointed by the Secretary of War to survey the Army's food facilities, including mess buildings, equipment, and operations in the preparation and handling of food. Formed at the request of the Office of the Quartermaster General, the committee is expected to report "the adequacy of the Army's messing of troops as well as to furnish information toward further improvement," according to a War Department release. John L. Hennessy, executive vice-president, Statler Hotels, is chairman, and Col. Paul P. Logan, Subsistence Division, Office of the Quartermaster General, is liaison officer member of the committee.

Marion E. Gray Receives Appointment. Miss Gray, formerly food consultant to the Air Quartermaster, Army Air Forces, has been appointed home economist for the Maxson Food Systems, 97–13 218 St., Queens Village, N. Y., producers of precooked, frozen meals which have been used by the Navy Air Transport Command.

Margaret E. Bock Appointed Itinerant Nutritionist. The appointment of Miss Bock, formerly assistant administrative dietitian, Medical College of Virginia, Richmond, as itinerant nutritionist for the American Red Cross Eastern Area, has been announced by Ramone S. Eaton, manager of the Eastern Area. Miss Bock's position is one newly created in the Red Cross Nutrition Service to meet an acute need in certain Red Cross chapters which lack qualified experts in nutrition. She will make extended visits to chapters in the areas which request her services in the developing and planning of nutrition programs in close cooperation with the nutrition committees. She will also help in locating instructors, and hold training classes for instructors where none are available.

Miss Bock is a native of Roxbury, Va., and received the B.S. degree from State Teacher's College, Farmville, Va., where she specialized in dietetics. She served her dietetic internship at the Medical College of Virginia, and later served as chief dietitian at Petersburg Hospital, and Westbrook Sanatorium, Richmond, where she taught nutrition and dietetics to student nurses. Miss Bock is a member of the American Dietetic Association and of the Virginia Dietetic Association.

Margaret Barclay Wilson died at her home in Washington on October 8 in her eighty-third year. She was professor emeritus of the Department of Physiology and Hygiene, Hunter College, at the time of her death. Dr. Wilson graduated from Normal College, now Hunter College, in 1884 and three years later commenced her 46 years as a member of the Hunter faculty. She received the M.D. degree from the Woman's Medical College of the New York Infirmary in 1893. She is credited with having inaugurated at Hunter the first courses on the chemistry of food, household economics, and textiles, and during World War I she gave the college $5,000 for the equipment of an ambulance. She had one of the largest collections of works on foods, dietetics, and the culinary arts, which she presented to the New York Academy of Medicine in 1929.

California Dietetic Association. Following are newly elected officers: president, Edith Marie Ferguson, Highland Hospital, Oakland; president-elect, Margaret Anderson, Scripps Metabolic Clinic, LaJolla; vice-president, Helen Hawver, Stanford Hospital, San Francisco; secretary, Shirley Dietz, Stanford Hospital; treasurer, Mary Verkuyl, San Mateo Community Hospital; member of House of Delegates, Elizabeth Starr, Los Angeles; chairman of Los Angeles section, Clancy Morrison, Occidental College, Los Angeles; San Diego section, Christmas Idle, San Diego; Bay section, Laura Hansen Silva. Committee chairmen include: Diet Therapy, Helen B. Anderson, Scripps Metabolic Clinic; Administration, Marguerite Richards, Fairmont Hospital, San Leandro; Community Education, Alice Bradley, University of California, Santa Barbara; Professional Education, Helen Gillum, University of California, Berkeley; Compilation of Diets, Reeva Grund, Beverly Hills; Placement Bureau, North, Margaret Warde, Alameda Hospital; Placement Bureau, South, Mildred Chase Cooke, Los Angeles; Publications Board, Ruth Melges, Pasadena; Nominating, Miss Idle; Publicity, Josephine Hardison, La Vina Sanitorium; History, Lillian Giebelstein, Los Angeles General Hospital; Legislative, Lavern Owens, State Bldg. #1, Sacramento.

Michigan Dietetic Association. Mary Eleanor Watters, South Haven, graduate of Michigan State College, has accepted the position of head dietitian at Community Hospital, Battle Creek. Jean Fetzer, who graduated from Fenn College in 1944, is her new assistant.

Janet Marvin, who completed her intern dietitian course at New York Hospital, is now head dietitian, Leila Hospital, Battle Creek. Pearl Senical, University of Montana, is the assistant dietitian.

Extensive alterations are being made in the Dietary Department of the Veterans Administration Facility at Fort Custer. The kitchen is being enlarged, an extension built to the bakery, a new refrigeration system installed, and new equipment purchased. This is in line with the increase in the capacity of the hospital from 1850 to 2400 beds. Mabel Sandvig is chief dietitian, Margaret Eaegle was recently promoted from head to the newly established position of assistant chief dietitian, and Mrs. Stella Blessington from staff to head dietitian. The two positions of staff dietitian remain to be filled.

Greater New York Dietetic Association. Under the 1945–46 theme, Nutrition Marches On, the October 16 meeting, with E. Alliene Mosso, president, presiding, included a panel discussion on Are We Well Nourished? with Dr. Robert S. Harris as chairman.

A social meeting was held November 8, sponsored by the Community Education section, Mary Ross, chairman.

On December 13 at the Nurses Residence Auditorium of the New York Hospital, Betty N. Richmond, chairman of the Diet Therapy section, is to preside during a discussion of Recent Trends in the Use of Protein in Diet Therapy.

North Carolina Dietetic Association. Under the chairmanship of Mrs. Elsie W. Martin, the Diet Therapy section conducts a diet service for small hospitals of the state. The service, which has been adopted by several hospitals, furnishes, at a cost of $5, weekly menus with the most frequently needed therapeutic diets planned from the menus.

Recent marriages include: Lt. Sara Sue Cassell, formerly of Woman's College, Greensboro, to Capt. John Francis Toomey; Helen Mullican, formerly dietitian at Rex Hospital, Raleigh, to the Rev. Robert Lansing Hicks; and Mary Jane Beckerdite, dietitian, North Carolina Baptist Hospitals, Inc., Winston-Salem, to Lt. Leo B. Larabee.

Lt. J. W. Nygard, husband of Helen Strickland Nygard, Greensboro, died recently at Walter Reed Hospital.

According to the September *Bulletin*, Blanche Tansil, president of the association, conducted a series of workshops on school lunchroom management during the summer. The courses were given in Jackson, Miss.; Winthrop College, and in Greenville, S. C.; and at the University of Georgia.

Recent appointments include: Louise Morelock, now dietitian at Veterans Facility, Oteen, replacing L. Annette Walker, transferred to Veterans Facility, Murfreesboro, Tenn.; Marylila Bibb, graduate of the training course for dietitians, Charlotte Memorial Hospital, now ward dietitian; Florence Kitchen and Mary Anne Lambert, now head dietitian and assistant, respectively, at Agnes Scott College, Georgia; Mrs. Margaret Grimes Autrey, now in charge of food service at the new hospital for infantile paralysis patients, Charlotte Memorial Hospital; Louie Forester, formerly teaching dietitian at Charlotte Memorial Hospital, who will reorganize the Dietary Department at Chatham Memorial Hospital, Elkin; Mrs. Julia Cox Cooke, now dietitian at Cabarrus County Hospital, Concord, replacing Mary Helen Hagaman; Beth Beyers, formerly at Kate Bitting Reynolds Memorial Hospital, Winston-Salem, now dietitian at Touro Infirmary, New Orleans; Mrs. Frances Allen Rostefer, now assistant dietitian at the State Hospital, Raleigh; Rosina Vance, for 13 years head of the Dietary Department, Deaconess Hospital, Boston, now director of the Dietary Department, North Carolina Baptist Hospital, and Bowman Gray Medical School.

St. Louis Dietetic Association. Following are the 1945–46 officers: president, Mrs. Helen Struble; vice-president, Vera

Lewis; secretary, Lily Mae Canady; and treasurer, Martha Study. The program of the October meeting, held at the Jewish Hospital Nurses Home, included as speakers: Alma Swenson, Stix-Baer-Fuller Department Store; Doris Harvey, Pet Milk Company; Elizabeth McCorkle, Scruggs-Vandervoots & Barney Co.

Utah State Dietetic Association. At the annual meeting held May 5, the following officers were elected for 1945–46: president, Katharine S. Bielby, who on May 31 resigned from the association, owing to the fact that she had accepted an appointment at Syracuse University Hospital, Syracuse, New York; vice-president, Mabel Johnsrud, St. Mark's Hospital, Salt Lake City; treasurer, Marie Driscoll; secretary, Mrs. Jeanne Parker Turner; delegate, Mildred Bowers, University of Utah; chairman of projects, Lt. Emma Chapman Platt, Hill Field. Nominating committee: Lt. Ruth Clayton Kearnes, Fort Douglas; Lt. Dorothy Marden, Bushnell Hospital, Brigham City; and Lillian Young, St. Mark's Hospital.

Jeanne Bump Cutler has announced the birth of a third son, born May 29.

Sybil Christensen, educational supervisor, Dietary Department, St. Mary's Hospital, Rochester, Minn., has been appointed chief dietitian at Latter-Day Saints Hospital, Salt Lake City. Virginia Hagenson has returned to work at the latter hospital after a leave of absence.

Wisconsin Dietetic Association. The first meeting of the newly elected Executive Board was held October 6 at the Schroeder Hotel, Milwaukee. Officers are: president, Breta L. Griem, Gridley Dairy Company, Milwaukee; president-elect, Lucille Billington, State Health Department, Madison; secretary, Grace Towell, St. Luke's Hospital, Milwaukee; treasurer, Ruth Dickie, Wisconsin General Hospital, Madison.

Announcement was made by Susan West, retiring president, that Dr. C. A. Elvehjem, University of Wisconsin, who has made many contributions to the programs of the various meetings, has accepted honorary membership in the association.

Future plans include: continued work on state registration of dietitians by the Legislative Committee; an educational program emphasizing the value to health of the use of whole grain and enriched bread and flour in the daily dietary by the Community Nutrition section; a study of personnel problems in food service departments of hospitals, institutions, restaurants, and industrial plants, with a view to improving service, to be undertaken by the Administration section; adaptation of methods of teaching student dietitians and student nurses to the courses recently outlined by the American Dietetic Association, to be studied by the Professional Education section; and a continuation of the study of the amino acids by the Diet Therapy section.

Plans are also under way for the establishment of a scholarship to enable home economics students who have majored in dietetics to continue with the fifth year of practical work which is required for membership in the national Association.

Virginia Pflaum and Elizabeth Bice, graduates of the University of Wisconsin, have been appointed to the dietary staff of Milwaukee Children's Hospital.

The Milwaukee Dietetic Association met at St. Joseph's Hospital October 3. Dean Swietlik of the Law School, Marquette University, director of Polish relief, described food conditions in Europe as observed on a recent trip.

Hedwig Poehler, nutritionist, Milwaukee Health Department, is editor of a new publication entitled *Nutrition Echoes*, the mailing list for which includes all the public health nurses of the city.

A course in Sanitation for Food Handlers, organized by Mrs. Griem, who is nutrition chairman, Milwaukee County Chapter of the American Red Cross, and directed by the Milwaukee Health Department in cooperation with the Vocational School, proved very successful in Milwaukee. Six hundred people including dietitians, teachers, restaurant operators, bakers, and representatives of industries interested in cafeterias, attended the institute which preceded the course. Alberta Macfarlane, National Restaurant Association, and Dr. W. L. Mallmann, Michigan State College, were speakers. Five hundred workers registered for the first series of lessons and requests have been received for more classes.

Dr. Milton Senn, co-author of *All About Feeding Children*, was guest speaker at the November meeting of the medical staff of Milwaukee Children's Hospital. Dr. Senn is a former pediatric resident of Children's Hospital and is now head of the Psychiatric Department, Cornell University.

Nell Clausen, supervising dietitian, Milwaukee Children's Hospital, was among the staff members of the hospital who recently received a diamond service pin in recognition of 20 years' work. Those with a record of 10 years received a pearl service pin.

Lt. Agnes Walish, just returned from the European War Theater, was a visitor at Milwaukee County Hospital where she was formerly a member of the staff. Lieutenant Walish is now stationed at Fort Sheridan.

News From Advertisers and Exhibitors. Wyeth Inc., 1600 Arch St., Philadelphia 3, announces the opening of a branch depot in Memphis, Tenn., which will serve as a distributing point for its complete line of pharmaceutical, biological, and nutritional products throughout the states of Tennessee, Arkansas, Mississippi, and other sections of the mid-South.

The booklet *Stork Sense*, prepared by Alice M. Cooley, director of home economics, National Dairy Council, Chicago 6, includes menu suggestions and calorie listings of foods for the expectant mother.

A new product for B complex therapy has been introduced by Hoffmann-La Roche, Inc., Nutley, N. J., under the name of Berocca Compound tablets. These small, well-tolerated tablets supply generous amounts of vitamins B_1, B_2, B_6, niacinamide, and calcium pantothenate in a form readily acceptable to the most fastidious patient. Low in cost, they can be prescribed for practically every patient without imposing an economic burden. Clinical samples and literature will be furnished upon request.

A breakfast combination of honey and cereals is appetizingly illustrated in a folder prepared by the American Honey Institute, Madison 3, Wis. Recipes for honey flake gems, bran peanut butter muffins, and Duchess cake are included, as well as directions for honey drops with honey orange icing and honey eggnog, to satisfy that ever demanded between-meal feeding of school children.

From Marie Gifford's test kitchen, Armour and Company, Union Stock Yards, Chicago, come the following "tricks of the trade": A new way to make hamburgers is to mix ½ lb. ground beef with ¼ tsp. salt, ½ cup milk; spread on slices of bread, crusts removed; place on cookie sheet and pour over them 2 tbsp. Vitalox diluted with 2 tbsp. water; broil 4 in. below heat unit 6 to 10 min. until desired doneness. Use small, numbered refrigerator jars for wise storage of drippings; keep bacon and pork sausage drippings in the same jars. Cut meat loaf baking time in half by shaping the meat mixture into small or individual loaves; cover with a barbecue sauce or diluted Vitalox while they bake. Keep in mind that the secret of tender meat loaves lies in equal portions of crumbs and liquid, no egg and only light mixing. Slicing corned beef hash is simple if you first chill the can in the refrigerator, open both ends, then push hash out onto slicing board. Broil some with peach halves topped with spoonful of pickle relish; bake some placed on tomato halves with onion slices on top. To make smooth gravy or white sauce, remove pan from heat when adding milk to melted fat and flour mixture. A little Vitalox (about 2 tbsp. to 2 cups white sauce) makes a rich, brown gravy. Breast down is the best way to bake fowl. Perch it on V-shaped rack in shallow, uncovered baking pan to let juice run down into breast and keep meat moist; brush fowl with unsalted fat, such as lard, before baking to keep skin moist; turn breast side up the last half hour of baking time. Dress up creamed leftover meats with various shaped toast cups or toasted strips of bread made into "lumber pile."

Mrs. Julia Kiene, director of the Home Economics Institute, Westinghouse Electric Appliance Division, announces the appointment of Grace B. Rinard, former supervisor of home economics for the Lansing, Mich., schools, as supervisor of testing and research work at the Westinghouse Institute. Miss Rinard will be directly in charge of all testing done on Westinghouse appliances in the Home Economics Institute where refrigerators, home freezers, dishwashers, Laundromats and other products are given actual consumer use checks. She received the Bachelor of Science degree in home economics at Michigan State Normal College, and formerly taught in Michigan schools at Harrisville, Milan and Lansing, and also directed the Lanham Nursery Schools in Lansing as a wartime volunteer job.

As an introduction to the efforts of General Mills, Inc. in the direction of visual-auditory education, a special showing of the film "400 Years in 4 Minutes" was given at the St. Regis Hotel, New York, September 19. According to Marjorie C. Husted (Betty Crocker), director of the home service department, this is the first film especially prepared by home economists for home economists. It is also suitable for other audiences such as P.T.A.

The Ralston Purina Company, St. Louis, again is offering a colorful and easy-to-use teaching kit on the subject of cereal grains. Included in the kit are *A Handbook of Cereal Grains*, a wall chart in color showing cross-sections of whole wheat grains, and a bar chart for bringing most diets up to proper nutritional standards. *A Handbook of Cereal Grains* tells the story of cereal grains through the ages and diagrams the various nutritive values of whole wheat. The need for a better breakfast is explained in detail. Special charts indicate the daily food needs of a moderately active man and woman and the proportion of these needs a good breakfast should supply. Tested recipes for cereal dishes are included, with a list of important food nutrients. Ralston is also offering a packet of quantity recipes, on standard 4 x 6 cards, with ingredients indicated for 6 and for 50 portions. All of this material may be obtained free of charge by clipping the coupon from the advertisement of the Ralston Purina Company in this issue of the JOURNAL.

JOURNALS ABSTRACTED IN THE CURRENT LITERATURE SECTION OF THIS JOURNAL[1]

American Cookery. New York.
American Journal of Digestive Diseases. Fort Wayne, Ind.
American Journal of Diseases of Children. Chicago.
American Journal of Medical Sciences. Philadelphia.
American Journal of Physiology. Baltimore.
American Journal of Public Health and the Nation's Health. New York.
American Journal of Surgery. New York.
American Restaurant Magazine. Chicago.
Annals of Internal Medicine. Lancaster, Pa.

Archives of Internal Medicine. Chicago.
Archives of Pediatrics. New York.

Baker's Helper. Chicago.
British Medical Journal. London.
Buildings and Building Management. Cedar Rapids, Iowa.
Bulletin of the Johns Hopkins Hospital. Baltimore.

Canadian Journal of Public Health. Toronto.
Canadian Medical Association Journal. Montreal.
Cereal Chemistry. Lancaster, Pa.
Chain Store Age. Orange, Conn.
Consumers' Guide. U. S. Government Printing Office, Washington.

Endocrinology. Springfield, Ill.

Food Field Reporter. Philadelphia.
Food Industries. Chicago.
Food Research. Champaign, Ill.

Horwath Hotel Accountant. New York.
Hospital Management. Chicago.
Hospitals. Chicago.
Hotel Management. New York.
Hotel Monthly. Chicago.

Ice Cream Trade Journal. New York.
Industrial Medicine. Chicago.

Journal of the American Medical Association. Chicago.
Journal of Aviation Medicine. St. Paul, Minn.
Journal of Biological Chemistry. Baltimore.
Journal of Clinical Investigation. Boston.
Journal of Home Economics. Washington, D. C.
Journal of Nutrition. Philadelphia.
Journal of Pediatrics. St. Louis.

Lancet. London.

Medical Officer. London.
Milbank Memorial Fund Quarterly. New York.
Military Surgeon. Washington, D. C.
Modern Hospital. Chicago.

Nation's Schools. Chicago.
New England Journal of Medicine. Boston.
New York State Journal of Medicine. New York.
New Zealand Medical Journal. Wellington, New Zealand.
Nutrition Abstracts and Reviews. Aberdeen, Scotland.
Nutrition Reviews. New York.

Personnel Journal. New York.
Physiological Reviews. Baltimore.
Practical Home Economics. New York.
Public Health Nursing. New York.
Public Health Reports. Washington, D. C.

Restaurant Management. New York.
Revista de la Asociación Argentina de Dietología. Buenos Aires.
Revista de Medicina y Alimentación. Santiago.
Revista de Sanidad y Assistencia Social. Caracas.
Revue Internationale des Industries Agricoles. Paris.

Science. New York.
Scientific Monthly. New York.
Southern Medical Journal. Birmingham, Ala.

War Medicine. Chicago.
What's New in Home Economics. Chicago.

[1] Occasionally certain articles are covered elsewhere in the JOURNAL.

INDEX TO VOLUME 21

The following abbreviations indicate the source of the material indexed: "ab" abstract under current literature; "cc" current comment; "ed" editorial; "f" filler; "n" nutrition and the war; "nn" news notes. An asterisk indicates an original article in this JOURNAL. Books reviewed appear in the subject index under "book reviews." Author index, which follows subject index, includes only the names of authors of original material appearing in this JOURNAL in full or abstracted in the editorial section or in fillers, and authors of books reviewed.

Subject Index

A

Absenteeism, ab 652
Acceptability of meals served in the air, *415
Accident prevention, ab 48, 470, 712
Acid (*see* amino, ascorbic, etc.)
Activity in relation to diet, ab 174
Adaptation, dark (*see* vitamin A)
Adenosine triphosphate, ab 314
Administration (*see* personnel, etc.)
Administrative procedures, better: Keynote for 1945, ed *92
Adrenal weight and diet, ab 646
Adulteration in foods, use of Wood's light, ab 652
Advertising, help wanted, ab 324
Agar, ab 320
Aged (*see* geriatrics)
Air, cargo for food, appraisal, *283
  forces personnel, Army, problem of feeding, *413, *415
  liner, meals aboard, f 419
  shipment by (*see* food)
Albumin regeneration, ab 176
Alcohol, problems, ab 648
Alcoholism, treatment, ab 314
Alimentary paste standards, nn 120
Allergy
  and fatigue, ab 384
  vitamin C in, ab 710
Alpha-tocopherol (*see* vitamin E)
Altitude and excretion, ab 316
America, tropical, new crops in, f 546
American Association for Advancement of Science, nutrition meeting, nn 402
American Dietetic Association
  annual meeting, ab 116, nn 562
  annual meeting, interpretive report, f 429
  award (*see* award)
  Executive Board, nn 250
  House of Delegates, meeting, 1945, nn 664
  Nominating Committee report, 1944–45, ed *444
  and OWI directory, nn 564
  President, address, *683
  President, Bessie Brooks West, ed *629
  publications to be exhibited abroad, nn 562
  training courses (*see* dietitian, training)
American Home Economics Association
  legislative program, ab 184
  prominent members retiring, ab 558
American Hospital Association, nn 186
American Red Cross (*see also* dietitian)
  dietitian, overseas, f 286
Amino acid (*see also* protein, specific amino acid)
  composition, of proteins, f 695
  and hemoglobin formation, ab 650
  parenterally, ab 552
Anaphylaxis (*see* allergy)
Anemia (*see also* blood, hepatitis, iron, etc.)
  and goat's milk, ab 108
  hyperchromic, ab 36
  and pantothenic acid, ab 711
  in scurvy, ab 646
Angels of Bataan, ed *296
Annual meeting (*see* American Dietetic Association)
Apple juice, ab 108
Appointments and promotions, Army dietitians (*see* Army)
Argentina, postwar nutrition policy, f 21
Ariboflavinosis (*see* riboflavin)
Army (*see also* diet, dietitian, duty, food, mess, military)
  air forces, Army, feeding, *413
  diet in the tropics, ab 116
Army (cont'd)
  dietary of troops, ab 392
  dietitian in an evacuation hospital, f 356
  dietitian under fire, ed *363
  dietitian on hospital ship reports Jap bombing, ed *443
  dietitian serves at sea, f 219, 344
  dietitian in South Seas, on vacation, f 80
  dietitians, appointments and promotions, Medical Department, 30, 102, 170, 236, 308, 376, 454, 538, 638, 708
  dietitians awarded Bronze Star, ed *161, *629, 704
  dietitians, food and nutrition conference, nn 562
  dietitians in India, f 222
  dietitians needed in Army hospitals, f 104, 213, 456
  dietitians organize in Hawaii, nn 478
  dietitians in Philippines, ed *443, f 456
  dietitians, recruitment, letter from Surgeon General re, ed *704
  dietitians in Regular Army, nn 664
  dietitians, released from the service, nn 664
  dietitians repatriated, ed *296
  dietitians separated from service, f 708
  dietitians in service, number of, nn 562
  dietitians at work, ed *297
  hospital, food preparation and service, cc *368
  hospitals, inspection tour of, *505
  medical department personnel, f 456
  menus, 1918 and 1943, f 184
  mess, acceptability of vegetables, *616
  mess, management, 1916–18, f 356
  needs more dietitians, ed *296
  school for student dietitians, nn 478
  students, food of, *285, *348
  supply, cc *372
  vitamin C intake in, ab 38
Army Medical Department Dietitians (*see* Army dietitian)
Arthritis
  and diet, ab 244, 246
  treatment, ab 650, 710
Ascorbic acid (*see also* vitamin C, specific food or food process)
  content of canned foods, effect of preparation, *7, *700
  content of food served to Army students, *348
  content of fresh and salted vegetables, *360
  content of freshly harvested vegetables, *153
  content of fruits and vegetables, cc *364
  content of Lima beans, frozen and canned, effect of home cooking practices on, *289
  in hay fever, ab 552
  intake in Army, ab 38
  oxidase, ab 711
  to preserve color and flavor, nn 256, ab 556
  requirements, ab 40, 106
  retention, fresh citrus juices, ab 470
  in school lunches, ab 114
Asparagus, frozen, *273
Associations, state, 1944, nn 192
Australia, Victoria Dietetic Association, nn 670
Australian Institute of Anatomy, school of nutrition, f 707
Avitaminosis (*see also* specific disease, vitamin, etc.)
  B_1, and milk intoxication, ab 174
Avocado, vitamin D in, ab 244
Award, Marjorie Hulsizer Copher, ed *703
Awards, nutrition, f 640

B

Babies, how to feed while traveling, f 217
Bacon, overseas, nutritive value, ab 650
Bacteria, ab 462
Bacterial examination, ab 644
Bakery techniques, ab 112
Baking, glycerine in, ab 654
Baking powder formulation, nutritional aspects, *611
Bananas, nn 715
Beans (*see also* vegetables, specific process)
  dried, nn 120
  green, canned, effect of preparation, *7
  green, frozen, *273
  Lima, canned, effect of preparation, *7, *289
  Lima, frozen, *273, *289
  snap, ascorbic acid content, *153
  snap, salting, nn 568
  soy (*see* soy, soybeans)
  wax, frozen, *273
Beaumont Memorial Foundation, nn 190
Beef (*see also* meat, protein, vitamin)
  Argentine, ab 652
  corned, losses in processing, ab 394
  preparing, f 91
Beefsteak, nn 328
Beets, pickled, nn 408
Belgium's food problem, *69
Beriberi (*see also* deficiency, thiamin)
  heart disease, ab 710
Biological Abstracts, annual report, nn 572
Biotin, paralysis cured with, ab 644
Blood (*see also* anemia, insulin, etc.)
  regeneration after hemorrhage, and folic acid, ab 106
  sugar, effect of prolonged physical inactivity, ab 242
Blueberries, frozen, ab 182
Boelts, Ethel Irene, cc *161
Book Reviews, 34, 172, 240, 310, 380, 458, 544, 642, 709
  Allergy, Essentials of, 382
  Amino Acid Composition of Proteins and Foods, 172
  Arithmetic for Nurses, Self-Teaching Tests, 310
  Avitaminoses. The Chemical, Clinical and Pathological Aspects of the Vitamin Deficiency Diseases, 460
  Budget, Restricted Quantity and Cost, of Families or Children, 34
  Buffet, Serve It, 310
  Cafeteria Supervision, 546
  Chemical Formulary, Vol. VII, 460
  Children, All About Feeding, 458
  Children, School, Everyday Nutrition for, 382
  Cook, Junior, 310
  Cookery, Principles of, 709
  Cookery, Quantity, Vitamins in, 172
  Cooking for a Crowd, 34
  Diet Manual, 709
  Diet Manual, 709
  Diet Manual for Home Nursing, 642
  Digestive System, Your, 458
  Dishes, 200, for Men to Cook, 310
  Egg Cookery, 382
  Employment Opportunities for Women With Limited Home Economics Training, 240
  Flavor, 544
  Food and Food Products, Chemistry and Technology, Vol. II, 172

Food for Four Income Levels, Wartime, 546
Food, How to Preserve, 709
Food Service in Institutions, 380
Food Shortages, Menu and Recipe Suggestions to Cope With, 546
Food Values of Portions Commonly Used, 34
Food for the World, 458
Freezing, Quick, 34
Home Economics, Introduction to, 642
Home Economics in Junior Colleges, 240
Home Economics Teaching as a Career, 709
Home Economics Training, Limited, Employment Opportunities for Women, 240
Hospital, New York, A History of the Psychiatric Service 1771–1936, 458
Hunger, Hidden, 642
Hypertension, Arterial. Its Diagnosis and Treatment, 240
Industrial Cafeterias, Standard Recipes, 544
Industrial Nutrition, 172
Kitchens Near and Far, 172
Medicine, March of, 240
Men to Cook, 200 Dishes for, 310
Metabolism, Some Fundamental Principles, 460
Nurse and the Law, 546
Nurse Please! 172
Nurses, Arithmetic for, 310
Nutrition and Diet, Psychology, 380
Nutrition, Implications of, and Public Health in Postwar Period, 544
Nutrition, Planned, Vitality Through, 310
Nutrition Program for Elementary Schools of Youngstown, Ohio, 546
Nutrition for School Children, Everyday, 382
Nutrition With Sense, 172
Proteins and Amino Acids: Physiology, Pathology, Therapeutics, 34
Psychology of Diet and Nutrition, 380
Roentgenology, Clinical, of the Digestive Tract, 382
Ulcer, Peptic, Treatment of, 34
Vegetable Cook Book. Cooked to Your Taste, 460
Vitamins, What to Do About, 544
Woman Asks the Doctor, 310
Book reviews, criteria for judging, ab 554
Borden awards, nn 326
Bran, fiber and cellulose, digestibility, effect on laxation, *157
Brazil
  dietitian in, nn 250
  nutrition in, *7
Brazilian cooperatives, nn 190
Bread (*see also* enrichment)
  enriched, nn 328, ab 396
  soy flour in, to preserve freshness, nn 568, f 699
Breakfasts, better, ab 654
British Dietetic Association, nn 250
Broccoli
  ascorbic acid content, *153
  frozen, *273
Bronze Star (*see* Motley, Peterson, VerMurlen)
Brussels sprouts, frozen, *273
Bureau of Human Nutrition and Home Economics, accomplishments, 1944, ed 227
Burke, Mrs. Bertha Shapley, receives 1945 Borden award, nn 562
Burns
  dietary treatment, ab 550
  nutrition in, f 442
  thermal, carbohydrate metabolism, ab 42
  ulcer, following, ab 548
Butter
  fat, ab 468
  and sugar, saving, ab 662
  Texas, nn 715
  vitamins in, ab 466, nn 566
Buying (*see* cost, equipment, specific food)
B vitamins (*see* vitamin B complex)

C

Cabbage
  ascorbic acid content, nn 120, *153
  cooked, ascorbic acid loss, nn 668
Cafeteria (*see also* food, industrial, restaurant, etc.)
  hospital, food waste, f *77
  industrial, manual for, cc *306
  mobile, ab 472
  pay, for nurses, f 423, 432
  school, ab 50
  tray, ab 658
Caffeine
  effect on human beings, f 116
  and peptic ulcer, ab 40
Cake, flour, comparisons, ab 46
Calcium
  pantothenate, ab 644
  requirement, f 517
  of vegetables, ab 246
Canadian
  Navy, dietitian in, cc *366
  trends in food and nutrition, *220
Cancer, ab 242, 244, 246, 552
Candy, anti-, drive, nn 715
Canning (*see also* specific food or vitamin)
  ascorbic acid in, ab 472, nn 480
  asparagus, nn 406
  in British Dominions, ab 46
  carrots, *7
  equipment, nn 254, 406
  fruits, nn 568
  manual, f 460, nn 715
  meats, poultry, ab 400, nn 406
  motion picture, nn 254
  standards, f 512
Carbohydrate metabolism, ab 108, 548
Cardiac glycogen and hyperthyroidism, ab 174
Cardiovascular therapy, ab 646
Caries
  dental, and sodium fluoride, ab 652
  prevention, f 91
Carotene (*see also* vitamin A)
  in dehydrated potatoes, ab 470
  in fresh and salted vegetables, *360
  protection by gossypol, ab 316
  stabilization, f 695
  from sweet potatoes, ab 558
Carrots
  ascorbic acid content, *153
  canned, effect of preparation, *7
  frozen, *273
  preparation, nn 330
Cauliflower, frozen, *273
C-avitaminosis and sulfonamides, ab 242
Celiac syndrome, ab 548
Cellulose
  effect on laxation, *157
  sponges, ab 398
Celtuce, ascorbic acid content, *153
Cereal
  processing, ab 556
  thiamin content of, before and after treatment with carbon disulfide and methyl bromide to destroy insects, *516
Cheese, processed, ab 110
Cheilosis (*see also* riboflavin)
  and glossitis, ab 316
Chicago's nutrition problem, *214
Child
  feeding project, Greek war relief, cc *632
  health study in Great Britain, ab 316
Children (*see also* deficiency, growth, infant, specific condition or disease)
  convalescent care, conference on, ed *443
  Forsyth Dental Infirmary, f 344
  nutrition, psychological factors, ab 384
  ulcer incidence, ab 384, 386
Chile, dietitian in, f 350, nn 564
Chili contra chile, nn 188
China, chipped, ab 40
China, North, seen in, *427
Chinese food habits, ab 114
Cholesterol, content of foods, *341
Choline
  determination, ab 40
  and hemorrhagic kidneys, ab 108
  ingestion, excessive, ab 556
Cirrhosis (*see also* hepatic)
  treatment, ab 392
Citrus
  council, ab 322
  juice, ascorbic acid retention, ab 470
  juice, deterioration, ab 556
  juice, frozen, ab 48
Civil service (*see also* dietitian)
  dietitians needed, f 607
  legislation, and dietitians, f 154
  positions, state, nn 664
Cleaning
  floor, ab 180
  schedule, cost, ab 114
College
  cooperative food service plan, *603
  residence halls, quality food production, cc *446
Color, effects, ab 658
Colostrum, fatty acids, ab 40
Confectionery, synthetic vitamins added, ab 244
Conservation, food, study of plate waste as a directive measure, *608
Constitution (*see* American Dietetic Association, annual meeting)
Containers, food (*see* packaging)
Convalescence (*see* nutrition)
Cookery (*see also* food)
  art of, ab 318
  large-scale, ab 312
Cooking
  appliances (*see* equipment)
  practices, home, effect on ascorbic acid content of frozen and canned Lima beans, *289
Cooks and bakers, training, ab 396, 400, 470, 472, 658
Cooperative food service, college, *603
Copher, Marjorie Hulsizer, First Memorial Award, ed *703
Corn
  ascorbic acid content, *153
  canned, effect of preparation, *7
  frozen, *273
  maturity, determination, ab 656
  meal, enrichment, ab 713
  meal, white, shortage, effects, *287
  salted, nn 668
Correction, nn 564
Cost (*see also* cleaning, equipment, food, etc.)
  control, nn 666
  distribution, food of Army students, *285
  of living, nn 54
Council on Foods and Nutrition, American Medical Association, *297, ab 464, f 697
Cream
  nonperishable, ab 656
  substitute, ab 470
Cress, nutritive value, ab 44
Cuba
  nutrition in, cc *304
  school lunches in, nn 474
Current Comment, 25, 93, 161, 228, 302, 364, 446, 530, 630, 704
Current Literature, 36, 106, 174, 242, 312, 384, 462, 548, 644, 710
Cutlery, care, selecting, f 150, ab 654

D

Darby, Clara Ruth, prisoner of war, repatriated, ed *296
DDT, ab 652
Deficiency (*see also* anemia, dietary, nutrition, perlèche, specific mineral or vitamin)
  dietary, ab 652, 711
  disease, diagnosis, ab 40
  diseases in children, ab 38
  and the eye, ab 689

Defroster, electronic, ab 654
Dehydrated potato shreds, effect of quantity preparation procedures on vitamin retention and palatability, *518
Dehydration (*see also* dehydrated, dried food, and specific food), ab 320, 656
  eggs, ab 394
  industry, progress, f 353
  vegetables, nn 668
Detergent (*see also* cleaning, soap)
  soapless, ab 560
Detroit typifies a trend in school feeding, *73
Diabetes (*see also* hypoglycemia, insulin)
  alloxan, control, ab 176
  and arteriosclerosis, ab 38
  coma, ab 314
  experimental, ab 710
  lactic and pyruvic acids, ab 40
  mellitus and glycosuria, ab 648
  and obesity, ab 652
  pregnancy complicating, ab 464
  "skin" ab 711
  steatorrhea, ab 246
  treatment, ab 176, 550
Diabetic association, nn 190
Diarrhea
  epidemic, ab 176
  treatment, ab 644
Diet (*see also* children, infant, nutrition, pregnancy, rationing, specific disease, etc.)
  activity in relation to, ab 174
  historical notes, f 295, 359, *508, *690
  manual used in Pacific Theater, f 278
  and nutritional status, ab 316
  prenatal, ab 178
  purified, and vitamin requirement, ab 650
  in rural areas of Middle Tennessee, adaptation of short method of calculating nutritive content, *522
  therapy (*see also* dietitian)
  therapy in congestive heart failure, *86
  therapy, importance of protein in, *436
  therapy team, dietitian as member, *424
Dietary
  analysis, adaptation of short method in rural areas of Middle Tennessee, *522
  analysis, short method of, food composition table, *440
  deficiencies, ab 652
  level of 100 families, ab 558
  survey, nn 716
Dietetic
  Advisory Council, Veterans Administration, f 607, ed *629
  departments in Army hospitals, inspection tour, European and Mediterranean Theaters of Operation, *505
Dietetics (*see also* diet, food, nutrition)
  majors, ab 558
  as a profession, nn 52, 474
  teaching, to student nurse, panel discussion, *623
  in Veterans Administration, *420
Dietitian (*see also* A.D.A., Army, civil service, industry, Navy, Women's Army Corps)
  Aide Corps, f 30, 359
  aide course, instructor's outline, cc *304, f 350
  aides, need for, continues, ed *300
  in Brazil, nn 250
  Canadian, nn 190
  in Chile, nn 564
  in Civil Service, needed, f 607
  Corps, for Veterans Administration, f 154, nn 250
  definition, f 414, ed *529
  in an evacuation hospital, f 356
  and geriatrics, *291
  in hospitals, nn 402
  in industry, Eastman Kodak course, cc *96
  a member of therapeutic team, *424
  in Navy, n *100
  overseas, for UNRRA, nn 402, cc 632
Dietitian (cont'd)
  professional qualifications and designations, establishing, ed *529
  in Public Health Service, cc *302, nn 714
  qualifications and responsibilities, ed *530
  refresher course, nn 326
  repatriated, ed *296
  in Royal Canadian Navy, cc *366
  in school (*see* school)
  school, of charity and social welfare services, Chile, f 350
  specialist in feeding people, ed *529
  student, courses, approved, nn 250
  student, courses, wide scope of work offered, cc *93
  student, opportunity for, in government hospitals, f 382
  student, and school nutrition program, ab 392
  in Veterans Administration, given higher rating, f 456
  in Veterans Administration, needed, f 607
  wartime problems, f 238
  winning a place in the sun, *527
  in World War I, nn 402, 460
Digestion, effect of bran on, *157
Dining room management in pay cafeteria, f 432
Disease (*see also* specific condition or disease)
  influence of global war upon problems of, *513
Dish, plastic, ab 472
Dishwashing (*see also* detergent, dish)
  pre-rinser, ab 658
  research, nn 716
Doughnut mixes, ab 180
Dried *vs.* dehydrated, nn 666
Drying sweet corn, nn 668
Duty "under conditions almost beyond human endurance," ed *443

E

Edema
  and high fluid intake, ab 174
  nutritional, ab 464
Editorial, 24, 92, 161, 227, 296, 363, 443, 529, 629, 703
Education (*see* dietitian, health, nurse, nutrition, etc.)
Eggplant, ascorbic acid content, *153
Eggs (*see also* protein), ab 316, nn 408, ab 466
  booklet, nn 480
  candling, ab 322
  dehydrated, ab 394, 712
  dried, cooking, nn 668
  turkey, nn 330
  yolk, nn 330
Electronics (*see also* potatoes, rat)
  defroster, ab 654
  in food preservation, nn 188
Emotional and social factors in illness, ab 178
Employee (*see also* labor, personnel)
  efficiency, ab 48
  management, ab 314, 318, 398, nn 408, ab 472
  supervision, ab 184, cc *234
  training, ab 182, 324
  training, in hospital dietary department, cc *534
  training, in large state hospital, *1
Employment service, A.H.E.A., ab 114
Energy and weight gain, ab 242
England
  health in, ab 106
  wartime nutrition, ab 36
Enrichment (*see also* specific food)
  bread, ab 176, 318, 652, 660
  cereal, ab 110
  flour, ab 660
  and fortification of foods, ed *297
Enzyme metabolism, ab 386
Epilepsy, treatment, ab 312
Equipment (*see also* cutlery, dish, kitchen)
  commercial cooking, ab 322
  food, f 104
Equipment (cont'd)
  high-pressure, ab 318
  institution, sanitization, *142
  lubrication, ab 114
  and services, ab 324, 713
  survey, nn 330
Ergosterol (*see* vitamin D)
Erythrocyte characteristics, ab 174
Esau, incident of, cc *630
Europe (*see also* Army, food, United Nations Relief and Rehabilitation Administration, specific country)
  food for starving, f 622, 712
Excretion and altitude, ab 316
Executive Board (*see* American Dietetic Association)
Exhibit, how to plan, ab 396
Eye, conjunctival changes, ab 650

F

Factor, anti-stiffness, ab 648
Fasting and ability to work, ab 242
Fat (*see also* butter, margarine, shortening, etc.)
  dietary, and inositol, ab 316
  in food manufacture, ab 468
  -free diets, ab 394
  nutritive value, ab 466
  and oils in cooking, ab 468
  salvage, nn 54, 714
  vegetable *vs.* animal, ab 711
Fatigue
  and allergy, ab 384
  possible causes, ab 386
  and pyruvic acid, ab 650
Feeding (*see also* children, food, industrial, etc.)
  Army Air Forces flying personnel, *413
  people, the dietitian—a specialist in, ed *529
Fellowships, predoctoral, in natural sciences, nn 666
Fetus, effect of diseases of mother, ab 644
Fiber and cellulose, in bran and certain common foods, digestibility and effect on laxation, *157
Fire prevention, ab 468
Fish
  cookery, ab 394, 713
  dehydrated, ab 46
  freezing, f 362
  guide, ab 48
  preparation, ab 48, 394
Flavor
  preferences, ab 110
  research, ab 658
Flavorings, ab 660, 712
Floore, Frances B., cc 632
Flooring, roachproof, ab 658
Floors, slippery, ab 322
Flour
  cake, ab 46
  cottonseed, protein value, ab 182
  enriched (*see* enrichment, soy)
  infestation, ab 46
  milling, f 689
  soy (*see* soy)
Folic acid and breast cancer, ab 246
Food (*see also* allergy, Army, canning, conservation, dehydration, diet, infant nutrition, packaging, rationing, waste)
  and Agriculture Organization (FAO), nn 188, cc 705
  and Agriculture, United Nations Interim Commission, *13
  air shipment, *283, f 460, nn 480
  Army Air Forces, ab 322
  of Army students, *285, *348, *616
  -borne disease, ab 36, *513
  briquettes, nn 56
  canned, nutritive value, *7, *354, *357, *700
  canned, standards, f 512
  and childbirth, f 689
  cholesterol content of, *341
  and civilization, f 210
  composition, practical problems, *351

Food (cont'd)
composition, table for short method of dietary analysis, *440
conservation, study of plate waste as directive measure, *608, *685
consumption in European countries, 1944–45, f 662
consumption levels, f 150
consumption in the United States. Part I. 1630 to 1860, *508
consumption in the United States. Part II. 1860 to 1941, *690
consumption by Wacs, f 83
cost, ab 46
dehydrated, ab 48
dehydrated, improvement in method of cooking, *148
and Drug Administration, annual report, f 152
and drug products, microanalysis, nn 120
editors, nn 52
enrichment and fortification, ed *297
foreign, nn 566
formulas, ab 470, 558
freezing, ab 182, 656, *696
frozen (*see also* specific food), ab 46, *273, *277, ab 322, 324, nn 568, 668
frozen, cooked, ab 398, 711
frozen, dip-coating, nn 480
frozen, merchandising, nn 668
grading, nn 406
habits (*see also* corn meal)
habits, child, nn 186, f 347, ab 390, *415, ab 468
habits, manual for study of, cc 706
handlers, training, ab 560, nn 564, 670
handling, *137, f 460, ab 658
movies (*see also* nutrition program materials), nn 566
new, ab 470, 558, 570, 656, 658, 712
and nutrition, Canadian trends, *220
and nutrition, committee, *297
and nutrition, graduate study and research, University of Alabama, f 460
and nutrition, popular response to information, ed *24
and nutrition program, national, cc 704
and nutrition publications, nn 186
nutritive value, served in naval messes, *88
packing, nn 480
poisoning, ab 36, 646
policy, surplus, nn 568
preferences, ab 42
preparation (*see also* specific food or method), ab 394
preparation in large Army hospital, cc *368
preservation (*see* canning, freezing etc.)
preservation in 1945, ed *227
preservation, electronic device, nn 188
preservation, publications, nn 254
preservative, penicillin as, ab 552
problem, Belgium's, *69
processing (*see also* canning, freezing, etc.), effect on flavor, ab 320
processing methods, *279
production, nn 52
production, in college residence halls, cc *446
production, in commercial tearoom, cc *452
production, in a decentralized plant, cc *96
production, streamlined, ab 112
purchasing (*see also* purchasing), ab 390
requirements (*see* diet, nutrition, etc.)
research, ab 390
sanitary care and handling, *137
service, cooperative, college, *603
service department employees, training program, cc *230
service directors conference, nn 186
service, efficiency, ab 110
service in general hospital, cc *450
service, hospital, labor practices, cc *228
Food (cont'd)
service manager, ed *530
shaping machines, ab 560
situation, national, nn 52, 118, f 144, nn 252, 326, 404, 474, ab 560, nn 564, 714
situation, world, f 662
spoilage, ab 390
standards, ab 468, nn 478
stock piles, ab 396
storage investigated, ab 396
surplus, distribution, ab 314
technologists, ab 46, nn 52, 118, 564
technology, ab 470
technology, division, M.I.T., nn 252
waste, in hospital, *608, *685
waste, in hospital cafeteria, f 77
Fortification of foods, ed *297
Fractures and diet, ab 106
Freezing
foods, ab 182, *277, nn 406, ab 462, nn 568, ab 656, 712
preservation and cooking, effect on vitamin content of soybeans, *696
Frozen foods (*see also* food, or specific vegetable)
nutritive value, *273, *696
packaging, nn 406, 568
processing and storage, *277, ab 560, 712
Fruit
ascorbic acid content, cc *364
canning, nn 568
cut, browning, ab 48
dessert, ab 470
dried, ab 44, 320
processing, ab 320
purchasing, f 512
wax coating, ab 470

G

Galactose, utilization, ab 650
Game, freezing, nn 715
Garden
to improve nutrition of children, nn 476
produce, estimating yield, nn 254
Gelatin as substitute for plasma, ab 36
Geriatrics
nutrition in, role, f 295
research, nn 252
and work of dietitians, *291
Gerontology, ab 644
Globin, human, in rats, ab 314
Globulins, gamma, ab 550
Glossitis and cheilosis, ab 316
Glycogen, cardiac, and hyperthyroidism, ab 174
Glycosuria and diabetes, ab 648
Gray, Marion E., appointed food consultant, nn 190
Greek war relief child feeding project, cc *632
Greens, wild, nn 408
Growth
calcium requirement during, f 517
child, improving through school lunches, *78
in childhood and military fitness, ab 644
factors, ab 390
and pantothenic acid compounds, ab 556
requirements, in chicks, ab 108
Guava, ab 468

H

Ham, overseas, nutritive value, ab 650
Hamburgers, ab 316
Havana, nutrition workshop, nn 186
Health, (*see also* education, nutrition)
education, f 6, 23, 72, ab 314
handbook, for farm families, nn 122
of industrial worker, ab 178
public, ab 178
Public, Service, dietitians in, cc *302
Public, Service, U. S., report, f 276
radio programs, ab 386
Heart (*see also* deficiency, vitamin B_1)
failure, congestive, diet therapy, *86
Heat diseases, ab 646
Hematopoiesis of bone marrow, ab 314
Hemoglobin
formation and amino acids, ab 650
level in school children, ab 176
levels of Women's Auxiliary Air Forces, ab 38
Hemorrhage, and cholesterol and ascorbic acid, ab 710
Hemorrhagic sweet clover disease, ab 316
Hepatic (*see also* cirrhosis, hepatitis, liver) disease, ab 650
dysfunction, ab 174
Hepatitis
and anemia, ab 36
infections, ab 646
latent, ab 36
"Heroes' Return," f 344
Histidine, dietary role, ab 710
Holland, nutritional conditions in, f 699
Home economics (*see also* A.H.E.A.)
careers, f 282, ab 712
after college, ab 248
curricula, ab 50, 248
education, ab 390
field day, f 344
history, ab 50, 114
Home economist, ab 114, 713
employing, f 238
what is? f 414, ed *529
Hominy, dehydrated, ab 320
Honey, production, nn 715
Hospital (*see also* cafeteria, diet, dietitian, employee, food, etc.)
dietary department, training employees, cc *534
diets, nn 564
food service, cc *450
food service departments, labor practices, cc *228
inventory, nn 562
purchasing (*see also* purchasing), nn 52
ship, dietitian on, reports Jap bombing, ed *443
state, employee training, *1
Hotel, management (*see* employee, etc.)
House of Delegates (*see* A.D.A.)
Housekeeping, ab 468
Human body, composition, ab 556
Hydrolysates for starving people, nn 478
Hyperinsulinism, dietary treatment, ab 180
Hypertension, transient, ab 646
Hyperthyroidism and cardiac glycogen, ab 174
Hypoglycemia
and blood glucose, ab 38
treatment, ab 38
Hypoproteinemia following pneumonia, ab 244
Hypotension, ab 386

I

Ice cream
freezer, cc *536
homogenization, ab 324
making, cc *536
packages, ab 324
quality in, ab 396, 658
research, ab 324, 396
Iceland, rickets in, ab 710
Illness, emotional and social factors, ab 178
Immunity, malnutritional, ab 244
Industrial
cafeteria, ab 44, 318, 398, 560
cafeteria, manual for operators, cc *306
cafeteria, personnel management, cc *536
employees, quality food for, *225
fatigue, and nutrition, nn 250
feeding (*see also* dietitian, food, industrial worker, industry, lunch, nutritionist), ab 44, nn 252, ab 318, 394, nn 478, 564, ab 654
feeding manual, nn 118
restaurant, operators' meeting, nn 566
toxicity and nutrition, ab 178
worker, health, ab 178, nn 404
worker, meals selected by, nutritional balance, cc *532
worker, nutrition of, ab 42

Industry, (*see also* dietitian, health, industrial feeding)
dietitians, Eastman Kodak course, cc *96
food service, in Australian factories, f 213
training within, program, nn 118
weekly menu and nutrition service to, *223
Infant (*see also* children)
feeding, ab 248
feeding, evaporated milk, ab 174
feeding, individualized, ab 176
nutrition, ab 246
Infantile peralysis funds, nn 666
Infections, proteins in resistance, ab 550
Inositol and dietary fat, ab 316
Insects
in cereal, destroyed by carbon disulfide and methyl bromide, *516
control, ab 246, 652
Insomnia, salt-restricted diet, ab 648
Institute of Food Technologists, nn 326
Institution (*see also* hospital, etc.)
management (*see* cafeteria, dietitian, hospital, etc.)
management, training (*see also* training), ab 248, nn 564
Insulin (*see also* diabetes)
in blood, ab 710
protamine, ab 548
Intelligence and sex, ab 554
Inter-American Affairs, Institute of, nn 256
Internment camp food, *427
Intravenous feeding (*see also* amino, hydrolysates, protein), ab 108, 711
Inventory procedure, ab 180
Iodine, hypersensitivity to, ab 710
Iron, utilization, ab 388

J

Jamaica dietary, ab 646
Japanese internment camps, nutrition, ab 174, *427, ed *443
JOURNAL, complete files needed, nn 474

K

Ketosis, ab 711
Kidney, hemorrhagic, and choline, ab 108
Kitchen (*see also* equipment)
illumination, ab 110
planning, ab 248, 318, 394, 662
utensils, selection and care, ab 472
ware for civilians, nn 256

L

Labeling, descriptive, ab 466, f 542
grade, ab 48, nn 404
Labor (*see also* employee)
practices in hospital food service departments, cc *228
turnover, ab 558
Lactation, and synthetic estrogens, ab 176
Lamb, effects of fatness, nn 480
Lard (*see* fat)
Latin-American (*see also* dietitian)
publications, nn 190
Legislation (*see also* Army, Civil Service, Veterans Administration)
medical, nn 186, 402
school lunch, nn 474
Legumes, vitamins in, ab 650
Leucopenia, pyridoxine in treatment, ab 180
Life, length of, studies, ab 392
Lighting (*see also* kitchen)
office, ab 112
postwar, ab 180
Lights are bright, *683
Linen, care, ab 322
Lipid balance, ab 394
Lipodystrophy, in children, ab 710
Liver (*see also* alcohol, cirrhosis, hepatic)
extract, effect on carbohydrate metabolism, ab 548
extracts, vitamin content, ab 462
fatty, and dietary methionine, ab 108
fatty, prevention, ab 42
function test, ab 462
iron in, nn 188
Longevity (*see also* geriatrics, gerontology, life)
and mental decline, ab 554
Lunch (*see* cafeteria, industrial, school)
Lunchroom (*see also* school, etc.)
management problems, ab 50, 400, 560
organization, ab 472, 713
school, in Uruguay, ab 384

M

Mackerel, nn 330
Malnutrition (*see* deficiency, vitamins, etc.)
Malt, as sugar replacement, ab 318
Management (*see* cafeteria, employee, hospital, institution, personnel)
Manual (*see also* diet)
for training food service department employees, cc *230
Margarine (*see also* butter, fat)
Army, bars use, nn 188
fortification, ab 554
legislation, ab 468
oleomargarine, ab 464
in restaurants, nn 328
survey, ab 466
Mayonnaise, ab 468
Meals (*see also* menu, etc.)
aboard air liner, f 419
between-, for workers, ab 654
frozen, f 362
nutritional balance of, selected by industrial workers, cc *532
served in the air, acceptability, *415
Meat (*see also* beef)
cooking, ab 394, 470
dishes, nn 188
game, ab 658, nn 715
low-point, ab 324
products, canned, growth of bacteria, ab 462
products, salvaging, ab 558
for school lunches, nn 56
shortage, nn 476
substitute, ab 472
Medical
care, cost, nn 480
care, state plans for, ab 646
Department Dietitians (*see* Army)
students, teaching nutrition to, *209
Medicine
constructive *vs.* preventive, ab 44
preventive, ab 650
preventive, and nutrition, ab 178
Menorrhagia (*see* vitamin K)
Mental decline, longevity and, ab 554
Menu (*see also* meals)
streamlining, ab 48
Mess
Army, survey, nn 716
Consolidated Officers', operation, cc *161
Metabolism (*see* carbohydrate)
Mexican foods, ab 556
Microchemical procedures, ab 644
Military
death losses, f 210
fitness, f 21
fitness, growth in childhood and, ab 644
personnel, feeding recovered allied, cc *530
Milk (*see also* children, formula, infant, etc.)
acidified, ab 44
chocolate, ab 384
containers, washing, nn 256
control, ab 110, 656
digestibility, ab 244
effect of cooking, ab 316
evaporated, adding vitamin D, ab 558
evaporated, in infant feeding, ab 174
fat, ab 711
fermented, bacteria in, ab 462
freezing, nn 568
goat's, nutritional value, production, ab 244, f 702
human, amino acids in, ab 108
intoxication and B_1 avitaminosis, ab 174
riboflavin in, ab 42
sickness, ab 552
Milk (cont'd)
supplies for the Royal Canadian Air Forces, ab 176
and thunder, nn 668
Mineral (*see also* iron, specific food, etc.)
nutrients in canned vegetables, *354
Mixes, prepared, ab 112
Morale and propaganda, f 210
Motley, Ruby, ab 190, nn 250, ed *296, *703
Movies (*see* food, nutrition program materials)
Mushrooms, frozen, *273
Mustard greens, ascorbic acid content, *153

N

National
food situation (*see* food)
Restaurant Association, f 226, nn 566
Navy, dietitians in, n *100
Netherlands, food for, nn 479, f 699
Neuromuscular exhaustion, new syndrome, ab 40
Newfoundland, medical survey of nutrition, f 507
News Notes, 52, 118, 186, 250, 326, 402, 474, 562, 664, 714
Niacin (*see also* pellagra, vitamin B complex)
in canned foods, *357
in corned beef, ab 394
deficiency, ab 390
precursor, ab 108
therapy, ab 466
Nicotinic acid (*see* niacin)
Nitrogen (*see* amino, protein)
Nominating Committee (*see* American Dietetic Association)
Nurse
Association, Visiting, nutrition and diet therapy service, cc *28
Corps, Cadet, ab 386
pay cafeteria for, f 423
public health teaching, cc *634, cc *636
teaching, approach to measurement of nursing competence, *618
teaching dietetics to; panel discussion, *623
training schools, proposed, nn 666
Nursery schools, Kaiser, feeding and nutrition program, *4
Nut (*see also* peanuts), nn 188, 715
Nutrition (*see also* children, diet, dietary, education, food, industrial, pregnancy, teeth, specific country or race)
and agriculture, *16
award, nn 56, f 640
and child mentality, ab 246
and community, *22
conference, A.A.A.S., nn 402
in convalescence and rehabilitation, ab 44
course, University of Brazil, nn 478
deficiencies, inadequate diets and, f 21
education, ab 106, 644, f 689
education, motivation of community groups, cc *26
education, techniques for motivating desire for, cc *25
Foundation, f 50
Foundation grants, nn 402
in geriatrics, *291, f 295
and industrial fatigue, nn 250
of industrial workers, ab 42
institute, Michigan State College, nn 118, ab 466
literature, ed *363
milestones, ab 246
National Council of, Union of South Africa, nn 188
in Newfoundland, f 507
and oral tissues, ab 644
of patient, severely burned, f 442
of populations, ab 106
and preventive medicine, ab 178
principles, ab 36, f 72
problem, Chicago's, *214
program, conducted by student dietitians, ab 392

Nutrition (cont'd)
program, industrial in United States and Canada, ab 392
program, in Kaiser nursery schools, *4
program, materials, nn 54, 120, 404, 570, 666, ab 713
program, national, proposed, nn 474
program, for public health nurses, cc *636
as protection against industrial toxicity, ab 178
and public health, *18, f 697
research, f 50, 426
review, new monthly, Uruguayan, nn 476
in school (*see also* school), ab 50
school of, Australian Institute of Anatomy, f 707
and soil resources, f 15
studies, rural Texas, nn 122
survey, ab 108, nn 564
teaching, ab 650, 662
teaching, extension service points a way, *218
visual aids, ab 248
workshop in Havana, nn 186
Nutrition and the War, 100
Nutritional (*see also* nutritive)
aspects of an improvement in baking powder formulation, *611
requirements in hard physical work, ab 178
research, future of, f 32
status, factory workers, ab 42, 392
status, midwestern college women, 145
status, populations, ab 312
Nutritionist (*see also* dietitian, industrial, nutrition, etc.)
definition, f 414
industrial, nn 118
training school for, cc 164
Nutritive value (*see also* nutritional, specific food or group of foods)
food, Army students, and cost distribution, *285
food, canned, *354, *357
food, improving, f 697
food, served in some large naval messes, *88
foods, frozen, *273
fruits and vegetables, as affected by preparation, *7

O

Oatmeal, retention of B vitamins during cooking, *155
Obesity
and benzedrine, ab 174
and diabetes, ab 652
among obstetric patients, ab 462
treatment, ab 312
Office of Price Administration (*see* rationing)
Oil (*see* fat)
Oleomargarine (*see* margarine)
Onions, ab 324
Operations, early rising after, ab 650
Oral (*see also* teeth)
tissues, and nutrition, ab 644
Orange
juice, nn 188, 406
juice, keeping, nn 566
Orr, Sir John Boyd, heads Food and Agriculture Organization, cc 705

P

Packages, institutional, ab 320
Packaging (*see also* specific food), ab 320, 468, 470, nn 666
frozen food, nn 568
Palatability and vitamin retention in potato shreds, effect of quantity preparation procedures, *518
Pantothenate, calcium, ab 644
Pantothenic acid
and anemia, ab 711
in canned foods, *357
compounds and growth, ab 556
Pantothenic acid (cont'd)
determination, ab 108
excretion, ab 648
Paper, waxed, ab 560
Paralysis, cured with biotin, ab 644
Pardew, Anna Bonner, ed *296
Parsnips, frozen, *273
Peaches
ascorbic acid added to before freezing, ab 556
freezing, nn 568
Peanut flour, ab 470
Pears, varieties, ab 50
Peas
ascorbic acid content, *153
canned, effect of preparation, *7, *700
frozen, *273
split, nn 408
vitamins in, nn 480
Pectin, jelling power, ab 46
Pediatrics, fashions in, ab 554
Pellagra (*see also* niacin)
death rate, nn 326
incidence, ab 108
infantile, ab 646, 710
in morphine addict, ab 646
prevention, ab 646
Penicillin as food preservative, ab 552
Peptic (*see* ulcer)
Perlèche and malnutrition, ab 40
Persimmons, nn 715
Personnel (*see also* employee)
administration, short course, Chicago, nn 118
management, ab 660
management, in industrial cafeteria, cc *536
Peterson, Solveig C., ed *629
Philippines, future, ab 565
Phosphates, acid-soluble, ab 314
Physical fitness (*see also* military)
and accident rate, ab 386
committee, nn 186
and job performance, ab 386
Physiology, and medical progress, ab 42
Pie
apple, ab 396
frozen, ab 654
Pneumonia, hypoproteinemia following, ab 244
Poisoning (*see also* allergy, food)
carbon monoxide, nn 666
lead, f 160
Poliomyelitis
and flies in food, ab 550
in Malta, ab 554
in monkeys; ab 464
Population growth, Japan, Europe, Egypt, nn 120
Pork
preserved by freezing, ab 462
sausage, ab 470
thiamin in, ab 462
Portugal, health conditions, ab 44
Posture, ab 554
Potatoes
carotene, ab 470, 558
dehydrated, ab 180, 470
electronic heating, ab 656
mealy, selection, nn 568
peeling, lye, ab 180
shreds, effect of quantity preparation procedures on vitamin retention and palatability, *518
storing, nn 715
sweet, ab 48, nn 668
sweet, dehydrated, ab 320
and vitamin C, nn 254
Poultry
packing, ab 320
preparing, ab 560, nn 715
Pregnancy
anemia in, ab 550
complicating diabetes, ab 464
nutrition in, ab 388, 548
protein deficiency in, ab 388
toxemia in, ab 646
Pregnancy (cont'd)
vomiting of, ab 246
President, Nation's wartime, dies, ed *296
President's address, *683
Processing (*see also* dehydration, freezing, etc.)
food, *279
and storage of frozen foods, *277
Professional
classification, Veterans Administration dietitians, f 456
qualifications and designations, further steps in establishing, ed *529
Promotions, Army dietitians (*see* Army)
Protein (*see also* amino acid, hypoproteinemia, infections, meat, milk, etc.)
deficiency, ab 388, 550
diet, in relief feeding, f 626, 695
in diet therapy, importance, *436
in human nutrition, ab 386, f 526
nutrition, amino acids in, ab 552, f 695
nutrition, in pediatrics, ab 464
nutritive value, methods for determination, *433
requirement, ab 550
requirement in gout, ab 394
in resistance to infections, ab 550
in surgery, ab 462
value, cottonseed flour, ab 182
vegetable, ab 320
Public health (*see also* dietitian, nurse, nutritionist, etc.)
course, nn 252, f 697
nurses, nutrition program for, cc *636
nurses, teaching, cc *634
Puerto Rico, Una Robinson in, nn 670
Purchasing
principles, nn 52, cc *166
specifications, f 512
Purine-free diet, ab 394
Pyridoxine (*see also* vitamin B_6)
in treatment of leucopenia, ab 180
Pyruvate metabolism, ab 108
Pyruvic acid
in blood, ab 390
and fatigue, ab 650

Q

Qualifications and designations, professional, further steps in establishing, ed *529

R

Rat
bites, ab 548
control, ab 48
trap, electronic, ab 656
Ration (*see* Army)
Rationing (*see also* food), nn 54, 120, 188, 256, 328, 404, 476, 570
effects of, ab 470
Refrigeration Abstracts, nn 568
Refrigerators (*see* equipment)
Rehabilitation (*see* nutrition)
Relief feeding, f 626
Renal, hemodynamics in dog, ab 36
Research
experiment station, ab 248
grants (*see* nutrition)
nutrition, f 426
Restaurant (*see also* cafeteria, etc.)
administration, fellowships, and scholarships, f 560
administration program, nn 188
conference, Canadian, nn 52
food service manager (dietitian) in, ed *530
human relations, f 576
lighting, ab 472
management, ab 110, 112, 712
Rheumatic fever sound film, nn 186
Rhubarb
ascorbic acid content, *153
frozen, *273
Riboflavin
content of canned foods, effect of preparation, *7, *357

Riboflavin (cont'd)
content of cornea, ab 42
in corned beef, ab 394
deficiency, f 526
in milk, ab 42
Rice
"scented," nn 570
thiamin content, effect of washing and cooking, *345
Rickets
in Iceland, ab 710
prophylaxis, ab 312
Roachproof flooring, ab 658
"Robots, amid a constant shower of," ed *363
Rose, Mary Swartz, nn 190

S

Safety, education, ab 48
Salads, preparation, ab 48
Salt (*see* insomnia)
Salvage (*see also* fat), f 85
Sanitary care and handling of food, *137
Sanitation (*see also* cleaning agent, dishwashing), ab 110, 180, 316
dietary department, ab 314
Foundation, National, nn 326
methods, nn 120, ab 472
Sanitization, institution equipment, *142
School (*see also* cafeteria, lunchroom, nursery, nutrition)
cafeteria, food, ab 560, 660
feeding, Detroit typifies a trend in, *73
food service course, ab 560
health, ab 242
lunch, ab 38, 114, 184, nn 186, ab 248, nn 252, ab 390, 400, nn 474, 562, ab 660, 662, nn 666, ab 713
lunch, in Cuba, nn 474
lunch, improving child growth through, *78
lunchroom managers, conference, ab 402
lunchroom, as part of educational system, *76, f 347, 689
lunchroom records, ab 400
milk scheme, New Zealand, ab 242
nutrition in, ab 242
Sciences, natural, predoctoral fellowships, nn 666
Scurvy (*see* ascorbic acid, vitamin C)
Sea, survival at, ab 244
Seafood restaurants, ab 662
Shock, cause and treatment, ab 40, 246
Short method of dietary analysis, *440, *522
Shortening (*see also* fat), ab 182, 466
Skeletal development, ab 314
Soap, ab 324
Social security legislation, ab 184
Soda, use of, in cooking vegetables, nn 668
Soldier (*see* Army, military)
Soup, dehydrated, ab 324
South Africa, Union of, National Council of Nutrition, nn 188
Soy
in meats, detection, ab 470
products, ab 46, 182, 322, nn 568
products, thiamin content of Japanese, *430
sauce, ab 556
Soybean
ascorbic acid content, *153
phosphorus, ab 650
and products in the menu, *696, *698
protein, ab 244
and sprouts, effect of freezing and cooking on vitamin content, *696
Spices, ab 654
Spinach
ascorbic acid content, *153
canned, effect of preparation, *7
frozen, *273
production, increase, nn 668
Sprue, vitamin levels in, ab 710
Squash, ascorbic acid content, *153
Starch
high viscosity, ab 182
sponge, ab 656
Starvation
advanced, ab 554
experimental study, on man, f 610
Steatorrhea, in diabetic, ab 246
Sterilizer, pot and pan, ab 654
Storage (*see also* packaging)
frozen foods, *277
rat-proof, ab 400
temperature, and aging, nn 406
Strawberry
harmful bacteria in, ab 246
spreads, nn 406
Student (*see* dietitian, medical, nurse, etc.)
Sugar
canning, nn 254
Philippine, ab 654
research grants, nn 404, 714
shortage, ab 658
source, new, nn 570
sparing, nn 480, ab 662
Sulfonamide
sensitivity and C-avitaminosis, ab 242
therapy, ab 462
Surgeon General, letter from, ed *704
Sweet potatoes (*see* carotene, potatoes)
Sweetmeat, high-vitamin, high-caloric, incorporating dried brewers' yeast, *84
Swiss chard, ascorbic acid content, *153

T

Table, food composition, for short method of dietary analysis, *440
Teaching (*see* dietitian, education, medical, nurse, nutrition)
Tearoom
college, ab 662
food production, cc 452
management, ab 112
Technologists, Institute of, nn 326
Teeth (*see also* caries)
deciduous, and nutrition, ab 652
Tennessee, Middle, diets in rural areas, adaptation of short method of calculating nutritive content, *522
Texas Agricultural Experiment Station bulletins, nn 572
Therapy, progress, ab 314
Thiamin (*see also* vitamin B_1)
content, canned foods, effect of preparation, *7
content, cereals before and after treatment with carbon disulfide and methyl bromide to destroy insects, *516
content, rice, effect of washing and cooking, *345
content, soybean products, Japanese, *430
deficiency, ab 650
deficiency, atabrine and, ab 556
and the heart, ab 38
in pork, ab 462
requirements, ab 312
stability, in baking powders, *611
and "suspended animation," f 32
in yeast, ab 711
Thiaminase, in fish products, ab 650
Thyroid (*see also* hyperthyroidism)
carcinoma, ab 244
Time and motion studies, nn 666, ab 713
Tomatoes
canned, ascorbic acid in, nn 668
canned, effect of preparation, *7
canning arithmetic, nn 568
composition of, ab 462
fresh, nn 570
Tongue, and dietary deficiency, ab 711
Tooth (*see* caries)
Training, approved course, some phases, ed *92, cc *93 *529
courses (*see* dietitian, employees)
program, food service department employees, cc *230, ab 713
school food service, ab 560
within industry program, nn 118, cc *234
Trichina, incidence, ab 44
Trichinosis, nn 406
Trypsin, action, on proteins, ab 390
Tryptophane requirement, human, ab 242
Turnip greens, nn 330
Tyrosine, decarboxylation, ab 42

U

Ulcer
in childhood, ab 384, 386
following cutaneous burn, ab 548
gastro-intestinal, in wartime, f 160
hemorrhage in, ab 242
peptic, ab 176, 384, 652
perforated, acute, ab 174
Undernutrition and hepatic disease, ab 650
United Nations
conference at San Francisco, nn 562
Relief and Rehabilitation Administration, nn 186, f 290, nn 326, 402, f 439, nn 666, 670
United States
Department of Agriculture releases (*see* food situation, national)
pictures of food consumption in, *508, *690
United Women's Conference, f 460
Uric acid excretion, ab 316
Uruguay
lunchrooms, ab 382
nutrition review, nn 476

V

Veal, ab 324
Vegetables (*see also* specific vegetable)
acceptability, in Army mess, *616
ascorbic acid content, *153, cc *364, nn 668
calcium of, ab 246
canned, nutritive value, effect of preparation, *7
canned, recipes, nn 188
cooking, nn 408
dehydrated, nn 120, 254, ab 470
dehydrated, use, in institutions, *151
fresh and salted, carotene and ascorbic acid in, *360
leafy, ab 652
nutritive value, nn 668
preparation, ab 396
purchasing, f 512
serving, ab 322
soda in cooking, nn 668
trimmings, nn 330
vitamin losses in, ab 244
vitamin retention in, ab 558
Venezuela, home demonstration in, f 707
Veterans
affairs, advisory group, nn 252
hospitals, dietitian's aides in, f 350
hospitals, nurses and dietitians in, nn 252, f 607
war, booklet for, nn 562
war, employing, ab 112, nn 404, 714
women, adviser for, nn 664
Veterans Administration (*see also* dietitian), nn 252, 404, f 456, nn 478, f 607
dietetic advisory council, ed *629
dietetics in, some aspects of, *420
permanent corps, f 154, nn 250
VerMurlen, Cathryn R., awarded Bronze Star, ed *161
Victory
gardens, and food preservation in 1945, ed *227
loan, f 617
Vitamin (*see also* cooking, deficiency, dehydration, and specific condition, food or vitamin)
and "alcoholic diseases," f 295
bioassays, ab 650
"business, this" f 353
and coenzymes and sulfonamide therapy, ab 462
content, liver extracts, ab 462
content, soybeans and sprouts, effect of freezing and cooking, *696
factories, in our bodies, ab 180
imbalance, ab 648
interrelationships, ab 390
restrictions on sale removed, ab 396
retention, canned peas, effect of quantity preparation procedures, *700

Vitamin (cont'd)
retention, and palatability of dehydrated potato shreds, effect of quantity preparation procedures, *518
retention, vegetables, ab 558
stability, in commercially-cooked foods enriched with primary dried yeast, *81
supplements, ab 40
synthetic, in confectionery, ab 244
Vitamin A (*see also* carotene)
requirements, ab 40
toxicity, ab 44
Vitamin B complex
in bull semen, ab 108
deficiency, ab 466, 648, 654
human requirements, investigation, *211
retention, in oatmeal, *155
Vitamin B_1 (*see* thiamin)
Vitamin B_2 (*see* riboflavin)
Vitamin B_6 (*see also* pyridoxine), ab 390
Vitamin C (*see* ascorbic acid, C-avitaminosis)
Vitamin D
action, ab 316, 710
in avocado, ab 244
Vitamin E
deficiency, ab 711
and kidney function, ab 312
Vitamin H (*see* biotin)
Vitamin K, in menorrhagia, ab 44
Vitamin P, bibliography, f 460
Vitamin Research Institute organized, nn 252
Vocation, choosing, ab 50
Vocational training, ab 658
Volunteer workers (*see* dietitian, American Red Cross)

W

Wac (Women's Army Corps), consumption of food, f 83
Wage rulings, ab 318
Wainwright, Alma S., Army dietitian on duty, ed *297
Waitress (*see* employee)
War (*see also* Army, nutrition)
global, influences of, upon problems of disease, *513
Waste (*see also* food)
materials, salvage, f 85
plate, checking, in hospitals and other feeding units, ed *24
plate, study, as a directive measure in food conservation, *608, *685
Water
balance, ab 644
requirement, f 116
sanitation, nn 564
Waves, Hospital Corps School, nn 186
Weight, gain, ab 242
Weissblatt, Vivian, prisoner of war, repatriated, ed *296
West, Bessie Brooks, President of the American Dietetic Association, ed *629
Wheat (*see* bread, cereal)
Whitehead, Margaret, Army dietitian, on duty, ed *297
Winning a place in the sun, *527
Women
college, midwestern, nutritional status, *145
experts, State Department Roster, nn 186
Work, and nutritional requirements, ab 178
Worker (*see also* diet, employee, food, industrial, nutrition)
aircraft, nutritional status, ab 392
Wounds, abdominal, ab 106

Y

Yams, ab 180
Yeast
adenylic acid, bulletin, nn 122
brewers', dried, in sweetmeat, *84
dried, enrichment, commercially-cooked foods, *81
food, ab 176

AUTHOR INDEX

A

Adams, D. A. C., 530
Albury, M., 518, 700
Ames, S. R., 357
Anderson, G. K., 297, 436
Armstrong, W., 145
Arnesen, R. V., 240

B

Baird, J. H., 420
Bane, L., 642
Banks, A., 240
Bennett, H., 460
Bernatowicz, L. J., 88
Berryman, G. H., 148
Bigwood, E. J., 69
Black, R., 230
Block, R. J., 172
Boelts, E. I., 161
Bolling, D., 172
Bowes, A. deP., 34
Breusch, F. J., 166
Brightman, S., 356
Brobeck, F., 310
Brown, C. M., 240
Bruckart, S. M., 153
Bruechert, M., 623
Brush, M. K., 7
Burns, H. C., 505
Butts, J. S., 415

C

Cahill, W. M., 433
Chapin, M., 642
Chase, J. T., 153
Chenoweth, W. W., 709
Church, C. F., 34
Clark, A. J., 157
Clausen, N., 217
Collings, M. L., 218
Cooper, W. A., 34
Cooperman, J. M., 155
Corcoran, A. C., 240
Cordery, D. L., 306
Cox, E. L., 372
Criep, L. H., 382
Crocker, E. C., 544
Crozier, A. E., 366

D

Dalldorf, G., 460
Davis, A., 310
Davis, F. H., 88
Davis, V., 623
Deute, A. H., 310
Dickins, D., 287
Dodge, Q. O., 223
Donelson, E. G., 145, 440
Dougherty, G., 3

E

Easton, A., 172
Ebbs, J. C., 351
Eddy, W. H., 460
Elliott, E., 240
Elvehjem, C. A., 155, 357
Escudero, P., 21

F

Feldman, M., 382
Fenton, F., 518, 700
Ferraro, M. A. S., 380
Floore, F. B., 96
Floyd, M. D., 423, 432
Fogarty, M. C., 219
French, C. E., 148

G

Gatten, E. L., 225
Gilbert, E., 546
Gleim, E., 518, 700
Gordon, E. E., 630
Gortner, R. A., 88
Granieri, O. S., 456
Gray, M. E., 413
Green, D. M., 415

H

Hacker, D. B., 28
Hageman, M. I., 608, 685
Halliday, E. G., 7
Harrington, M. M., 228
Harris, S. C., 360
Harrison, G., 546
Harrison, J. V., 86
Haugen, G. E., 88
Heckler, R. D., 76
Heuer, G. J., 34
Hinman, W. F., 7
Hochberg, M., 611
Holman, C., 34
Holt, L. E., Jr., 32
Hoppert, C. A., 157
Hudson, B. L., 88
Huey, E., 225

I

Ives, M., 357

J

Jacks, L., 624
Jacobs, M. B., 172
Jessee, R. W., 310
Johnston, M. W., 460
Jones, M., 15
Jones, T., 77

K

Kahn, R. M., 81
Kaser, M. M., 522
Kelly, M. C., 536
Keys, A., 211
Kinsman, G. M., 145
Kirk, N. T., 21, 705
Klobe, M., 534
Koch, E., 214
Kohn, L. W., 458
Korst, C. S., 350
Kramer, A., 354
Kramer, M. M., 285, 348, 427
Krause, M. V., 642
Kusner, C. E., 1

L

Larsen, S. A., 283
Lee, F. A., 696
Leichsenring, J. M., 440
Leverton, R. M., 145
Lewis, K., 80, 222
Lewis, M. N., 450
Light, A. M., 209
Linford, E. J., 546
Lowe, B., 277
Lowenberg, M. E., 4
Lynch, L. P., 234

M

McCarthy, E. A., 423, 432
McCartney, J. R., 700
McCay, C. M., 88
McCollum, E. V., 32
McConnell, J., 172
Macfarlane, A. M., 226
McHenry, K. A., 304
McKay, H., 145
McManus, R. L., 618
McNeal, W., 240
Macomber, M. H., 442
Macy, I. G., 642
Mallmann, W. L., 142
Marston, K. S., 546
Martin, E. A., 25
Mascarenhas, C. C., 11
Maynard, L. A., 15
Mead, M., 424
Melnick, D., 611
Miller, C. D., 345, 430, 516
Miller, E. K., 213, 363
Moore, M., 683
Morrissey, V., 452
Mudge, G. G., 634

N

Nelson, P. M., 145
Newburgh, J. D., 460
Newburgh, L. H., 209, 460
Newill, P. K., 458
Novak, E., 310

O

Odle, D. T., 285
Ohlson, M. A., 145
Okey, R., 341, 546
Oser, B. L., 611

P

Page, I. H., 240
Pendergast, W. S., 73
Pett, L. B., 220
Pierce, A., 34
Pine, M. B., 88
Pittman, M. S., 145
Price, M. S., 304, 350
Pritchard, M., 240

R

Reed, R. M., 100
Refshauge, L. M., 93
Reynolds, M. S., 145
Robinson, W. D., 522
Ronto, D. H., 96
Russell, W. L., 458

S

Saylor, N., 616
Schauss, V., 364
Schawe, W., 636
Schmitt, H. T., 81
Schultz, T. W., 458
Sebrell, W. H., 18
Selling, L. S., 380
Senn, M. J. E., 458
Sense, E., 172, 642
Shircliffe, A., 709
Short, M. M., 603
Simpson, J. I., 153
Simpson, R., 240
Smith, H., 172
Smith, H. L., 279
Smith, O. A., 278
Smull, M. L., 698
Spafford, I., 240
Spencer, G., 151
Spencer, R. W., 423, 432
Spinella, J. R., 84, 148
Sprague, H., 623
Steinkamp, R. C., 522
Stewart, D. K., 532
Strong, F. M., 357
Sullivan, J. H., 88
Sunderman, R. C., 81

T

Tanner, F. W., 137
Tansil, B., 78
Teleky, L., 172
Terrell, M. E., 446, 527
Thiessen, E. J., 616
Thompson, J. F., 518
Todhunter, E. N., 382
Tolley, H. R., 13
Tressler, D. K., 273
Tuohy, E. L., 291
Turner, M., 22

V

Vail, G. E., 698
Van Cleave, H. J., 513
Van Duyne, F. O., 153
Van Syckle, C., 508, 690
Visnyei, K., 518, 700

W

Wadsworth, H. I., 289
Wallace, L. H., 382
West, B. B., 380
Whitcombe, J., 696
Wickliffe, N., 368
Wilcox, E. B., 289
Williams, C. D., 310
Williams, H. H., 642
Williams, R. J., 544
Williams, S. F., 278
Williams-Heller, A., 460
Wilson, M. L., 16
Wood, LeV., 286, 380
Wood, M. J., 302

Y

Young, A., 26

Z

Zepplin, M., 357

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